N080-630 ERIC REPORT RESUME

ED 010 036 9-01-66 24 (REV)

A STUDY OF DEPTH OF FIRST-GRADE READING--AN ANALYSIS OF THE INTERACTIONS OF PROFESSED METHODS, TEACHER IMPLEMENTATION, AND CHILD BACKGROUND.

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CRP-2728
- -66
EDRS PRICE MF-$0.27 HC-$6.96 174P.

*READING INSTRUCTION, *TEACHER CHARACTERISTICS, *TEACHING METHODS, *BEGINNING READING, *EFFECTIVE TEACHING, FIRST GRADE, TEACHER ATTITUDES, CLASSROOM TECHNIQUES, READING PROGRAMS, BACKGROUND, TEACHER EXPERIENCES, READING ACHIEVEMENT, NEW YORK, NEW YORK

THE PRIMARY INVESTIGATION CONCERNED THE EFFECT OF TEACHER CHARACTERISTICS, STYLE, AND INTERPRETATION OF READING METHOD ON PUPIL READING ACHIEVEMENT SCORES BOTH IN JANUARY AND JUNE IN THE FIRST-GRADE YEAR. AN ANALYSIS OF VARIANCE DESIGN WAS USED. FOURTEEN TEACHERS COMPLETED A QUESTIONNAIRE DESIGNED TO DISTINGUISH TWO BASIC KINDS OF BEGINNING READING INSTRUCTION EMPHASIS--(1) 'DECODING' (ORAL READING AND SOUND-SYMBOL) OR (2) 'MEANING' (SILENT READING AND INTERPRETATION). EQUAL NUMBERS OF MEANING AND SOUND-SYMBOL EMPHASIS TEACHERS WERE REPRESENTED IN THE SAMPLE, AS WELL AS EXPERIENCED AND INEXPERIENCED TEACHERS WITHIN EACH EMPHASIS. THEIR ACTIVITIES WERE THEN STUDIED IN 12 CLASSES FOR ONE SCHOOL YEAR, FOLLOWING THE READING PROGRAMS EACH HAD USED PREVIOUSLY. PRINCIPAL DATA WERE COLLECTED FROM RATINGS OF TEACHER CHARACTERISTICS AND PRACTICES IN THE CLASSROOM AND FROM BATTERIES OF READINESS AND ACHIEVEMENT TESTS GIVEN TO PUPILS AT THE BEGINNING AND END OF THE SCHOOL YEAR, RESPECTIVELY. THE STUDY SUPPORTED IN A PRELIMINARY WAY (BECAUSE OF THE LIMITED SAMPLE AND AMOUNT OF ANALYSIS) THE OBSERVATION THAT TEACHER CHARACTERISTICS AND THE WAYS IN WHICH TEACHERS IMPLEMENT A GIVEN METHOD DO MAKE A DIFFERENCE IN THE READING ACHIEVEMENT OF THEIR PUPILS. THERE WAS ALSO SOME EVIDENCE THAT A THINKING APPROACH TO LEARNING, A SOUND-SYMBOL EMPHASIS WITHIN A BASAL READER APPROACH, THE USE OF THE APPROPRIATE DIFFICULTY LEVEL OF LESSONS RELATE POSITIVELY TO READING ACHIEVEMENT. (WN)

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A STUDY IN DEPTH OF FIRST GRADE READING: AN ANALYSIS OF THE INTERACTIONS OF PROFESSED METHODS, TEACHER IMPLEMENTATION AND CHILD BACKGROUND

Cooperative Research Project No. 2728

by
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1966

The research reported herein was supported by the Cooperative Research Program of the Office of Education, U.S. Department of Health, Education, and Welfare

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Acknowledgments

A study of this kind could perhaps be conceived, but could never be carried out without the cooperation and devoted assistance of many people.

We wish to thank Dr. Harold H. Abelson, Dean of the School of Education, for encouraging us to undertake the study, for his assistance in writing the proposal, and for adjusting our teaching schedules as well as those of Professors Florence Roswell and Gladys Natchez.

To our colleagues, Professors Florence Roswell and Gladys Natchez, who acted as consultants on the study, we give much thanks for their taking on the responsibility of observing the reading lessons, assisting in the various modifications of the Classroom Observation Inventory, and for interviewing the teachers.

A special note of gratitude is due to Professor Marvin Siegelman who, as our statistical consultant, worked out the computer programs, and guided us in solving the many intricate problems of data analysis and interpretation, all most arduous and time-consuming tasks.

We wish to thank our research assistants who were responsible for testing the children, making classroom observations and working out the coding of the data: Mildred Bloomfield, Evelyn Keisman, Robert Shapiro. Lois Hilton also worked with them in analysis and interpretation of the data.

We also acknowledge the assistance of the many graduate and undergraduate students in testing, scoring, and tabulating, especially Edward Silvoy, Gail Owgang and George Garfein.

Unfortunately, those without whom the study could literally not have been undertaken must go unnamed; the teachers, their assistant principals and principals and the assistant district superintendent who cooperated in the study. We are grateful to them for welcoming us to their classrooms and schools, for their assistance in testing the children, and for their interest and faith in the study.

I
The Problem

In the pursuit of improving reading instruction, much effort has been concentrated since the early 1900's on comparing the effectiveness of different approaches to beginning reading. The typical investigations have compared test results of pupils exposed to one method as compared to another after a specified period of time. While these studies have yielded useful information, the results have tended to be sufficiently equivocal to permit different interpretations with regard to the most effective methods for initiating the young child into reading.

A critical analysis of these past studies (Chall, 1965) disclosed that among their shortcomings were the following:

1. Failure of the investigators to describe in sufficient detail the teaching procedures covered by the labels assigned to the methods being compared.

2. Failure to account adequately for the differences in teachers' implementation of a given method.

3. Failure to describe and control adequately the background characteristics of the pupils.

4. The tendency to use global, end of experiment measures of reading achievement, rather than testing at various specified points on different components of reading.

The purpose of the present study was to explore in some depth the above points and the interrelationships among them. Of particular interest was point 2 above, that of the differences in teacher's implementation of a given reading method.

While it is commonly agreed that it is the teacher who makes the difference between the success and failure of a reading program, except for a few studies drawing this inference (Gates 1937, Currier 1923, Sexton & Herron 1928, Gates & Russell 1938), little is known about how the teacher actually influences the process of learning to read.

It was the thinking of the investigators that a reading method might well be modified by the teacher's perception of the components of that reading method and that the implementation might be as important a factor in reading achievement as the original method itself. Thus, in spite of the "approved" reading program and its particular emphasis, a teacher may, in her implementation of it, pull it more in one direction than another. For example, in the eclectic, basal reader approach used by many teachers, it was believed that although this appreach had a meaning emphasis, some teachers might "pull" it more in the direction of "decoding" or "meaning," and that such differences in implementation might possibly affect different components of pupils' reading achievement.

In addition, the level of the pupils' pre-reading skills might also be related to the teacher's implementation of a method, since her perception of their skills might cause her to modify the approved program in order to teach to their levels. Therefore pupils' skill levels were to be taken into account in the present study.

The question to be explored was: Does the teacher make a difference in the reading achievement of her pupils? And if so, what is it that she does that makes for the difference? In other words, the investigators wished to look at the relationships among the "approved" reading program, i.e., what the teachers said they emphasized, and what they actually emphasized as observed during reading lessons, all in relationship to first grade reading achievement. Rather than comparing the effectiveness of Method A versus Method B, exploration was to be made of the kinds of teaching procedures that might be found among teachers who were said to use one particular method -- in this instance, an eclectic, basal reader approach.[1]

Stated more precisely, the interrelations of three areas were to be investigated: 1. The child's level of pre-reading skills; 2. The reading method said to be used in class; 3. The teacher's implementation of that method; all three areas were to relate to reading achievement at the end of the first grade year.

There were no set hypotheses at the start; instead, the goals for the study included the development of various measuring instruments that would make it possible to know what teachers consider important in beginning reading instruction and what they actually do during reading lessons. Rather than set up an experimental situation, the study was to be done in a natural situation. The teachers were asked to use the methods and procedures they usually followed. The task, then, was to observe and record the various ways in which a small group of teachers, in one school system, with disadvantaged pupils, interpreted an eclectic, basal reader method, how they implemented it in the classroom, and whether the differences in their implementation affected the reading achievement of their pupils.

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[1] See Appendix A for a definition of an eclectic basal reader approach.

Since one of the major tasks was to devise various instruments to determine how the teachers interpreted the reading method and how they actually carried it out, a delineation of the major aspects of beginning reading was necessary.

Toward this end, a distinction was made between two kinds of emphases in beginning reading instruction: 1. "decoding"(sound-symbol), and 2. a "meaning" emphasis. One aspect on which various beginning reading methods may be said to differ is in the amount of time and attention that is devoted to either decoding or meaning as the first step. Methods that view the beginning reading process as essentially "mastering a code" would tend to put greater stress on learning to associate the sounds in the spoken words with the letters used to represent them, on sounding out words independently, on associating the spoken word with its whole word symbol, and on oral reading practice. Methods that view the beginning reading process as essentially similar to mature reading, that is "reading for meaning," would tend to put greater emphasis, right from the start, on developing a broad meaning vocabulary, on silent reading, and on interpretation of what is read.

These two conceptions of beginning reading are not completely separable since both are necessary components of reading instruction. However, reading methods, at least in the beginning stages, may well be classified as putting greater or lesser emphasis either on "meaning" or "decoding." Thus, most conventional basal reader programs since the 1930's may be classified as having a "meaning" emphasis, while most of the innovative beginning reading programs published in the late 1950's and early 1960's (the various "linguistic", "structural," and "systematic phonic" approaches) may be classified as having a "decoding" emphasis.

With such delineation of aspects of reading, it was possible to categorize the teachers by the importance they placed on either "decoding" or "meaning." Ratings of the teacher could then be obtained in two different situations. First, the preference for methods to be used in the classroom, i.e., a judgment of the professed method could be obtained. Second, a judgment of actual reading method, as observed in the classroom, could be obtained. The relationship of the two sets of measures to each other and to pupil reading achievement could hopefully be measured.

In designing the various rating instruments, those aspects which would differentiate the teachers on method of reading teaching were stressed. However, since the study was exploratory, the rating instruments also included other teacher and classroom characteristics, not necessarily related to beginning reading method, that might have an influence on school achievement. These included such ratings as amount and kind of reinforcement of learning, general classroom management, quality of teaching of various kinds of reading lessons, judgment of overall teacher competence, etc. In addition, since a large number of pre-reading tests were given to measure pupil background characteristics, and a variety of reading tests were given both in January and in June, a study of the relationships among these different pupil measures was undertaken. Again, as for the teacher variables, the purpose was to explore the relationships in the hope that they might shed further light on the beginning reading process, especially for the particular pupil sample of the study.

To summarize, there were no definite hypotheses as to which of the different teacher characteristics or reading methods emphases would make a difference, in which direction, on which components of first-grade reading achievement. If the data showed that the rating instruments had merit, then the investigators could, hopefully, generate some hypotheses regarding the relationship between what teachers say they do, what they actually do, and the reading achievement of their pupils at the end of grade one, taking pupil background factors into consideration.

II

Procedure

A. Design

The purpose of the study was to compare the relation of the teacher's professed reading method, her preparation of the child for such reading through instructional procedures, with various components of reading achievement at the end of the first grade year.

The study sample was composed of a selected group of first grade teachers and their classrooms. Evaluative tools were designed to measure or identify the many components of teacher performance in the classroom. These various components were related to reading achievement through means of tests administered to the pupil sample. Within the larger sample, a subsample of classes was given intensive study in order to focus on these relationships in greater detail.

Twelve teachers and their classes in the New York City public schools were selected for the study. On a questionnaire (see Appendix B) each teacher indicated the published reading programs she used, her views on reading instruction, and the time she allotted to various aspects of reading. The investigators then rated each teacher's professed instructional method on a meaning/sound-symbol continuum and based their selection upon the teacher position on this continuum. 322 children from the classrooms of these twelve teachers constituted the larger sample.

The subsample was composed of four of the twelve classes, four teachers and about 120 children.

Throughout the year members of the research staff made weekly observations of reading instruction in the four classrooms and monthly observations in the remaining eight. All children were given a battery of tests, base measures, at the beginning of the year. Children in the four intensively observed classes were given additional individual batteries at that time and at mid-year children in all twelve classes were evaluated at the end of the school year, and individual tests were again administered to the sub-sample. Table 1 outlines the design of the study.

Table 1
Design of the Study

	Eight Classes	Four Classes
Base measures for children	October	October
Observations of teacher implementation and pupil reaction	October - May (Bi-monthly)	October - May (Weekly)
Midyear evaluation		January
Final evaluation	June	June

All twelve teachers, whose classes were included in the study, used the reading procedures to which they had become accustomed in previous years. It was expected that a wide range of variation in both professed and implemented teaching procedures would exist. No instruction in methods was given and no new materials were used since the study concerned only normative classroom procedures.

B. Sample Selection

The twelve teachers used in the study were selected as follows: With the cooperation of the district superintendent, ten schools in a low socio-economic neighborhood were selected as possible participating schools in the study. In six of the ten schools, principals expressed interest in the study during conferences with the investigators. In those schools a questionnaire on reading belief and practice was given to each first-grade teacher. (See Chapter III for description of the questionnaire.) In all, 40 teachers were given questionnaires, 26 of which were returned.

From the scored items on the questionnaire teachers were placed on a continuum ranging from strong emphasis on sound-symbol relations to strong emphasis on meaning. This was based on their expressed preferences and their own report of allotment of class time for first-grade reading. See Chapter III for rating procedures.

In addition, teachers were also rated as experienced or inexperienced. Experienced was defined as having taught four years or more, and inexperienced was defined as having taught three or fewer years.

Twelve teachers were then tentatively chosen to fit into either a sound-symbol or meaning approach and likewise were designated as experienced or inexperienced, so that there would be equal numbers of each in the four categories. They were then interviewed by investigators to ascertain their interest in the study. Those who responded favorably were accepted as participants. Two teachers who dropped out before the study started were replaced by two others from the original list of 26 teachers. Two additional teachers dropped out during the study, and were also replaced by the new teachers taking over their classrooms.

Table 2 shows the final distribution by catagory of the 14 teachers who participated in the study.

Table 2

Distribution of Teacher by reading method
and experience catagories

Reading Method	Experienced	Inexperienced	Total
Meaning	3	4	7
Sound-symbol	4	3	7
Total	7	7	14

Since the original selection was made in June of 1964, the teachers were interviewed for a second time in September. At that time it was emphasized that *no deviations from their normal classroom procedures*

were expected.

The schools participating in the study were in low socio-economic neighborhoods in Harlem. Both Negro and Puerto Rican children attended the schools. While it was recognized that comparisons of middle and lower socio-economic groups were more desirable for the study, limitations of time and money allowed investigation of only one socio-economic status group. However, it was expected that a wide variation of skills would be found among socially disadvantaged children.

C. Administration of Tests

The initial testing of pupils was completed by the first week in October. The group tests were given by a team of three; one member on the project staff, the classroom teacher (in most cases), and an undergraduate assistant. The staff member administered the tests in every case. About ten to fifteen children were tested at one sitting. Individual tests were given only by the project staff members. A small group of Spanish-speaking children were tested separately by a Spanish-speaking undergraduate who administered those tests which were deemed feasible to use. A staff member supervised the testing.

The midyear individual tests, completed by the end of January, were administered to the four class sample by members of the staff. The end-of-year tests were given over a two-week span beginning May 27 through early June. The group tests were given the first week, followed by the

individual tests for all 12 classes and additional individual tests for the four class sample. Table 3 shows the test schedule for the entire sample:

Table 3

Tests administered during the study.
Time of Administration

Sample	October	January	June
12 classes	Murphy-Durrell Diagnostic Reading Readiness Tests 1. Phonemes Test 2. Letter Names Test 3. Learning Rate Test		Stanford Achievement Test, Primary I 1. Word Reading 2. Paragraph Meaning 3. Vocabulary 4. Spelling 5. Word Study
	Thurstone Pattern Copying Test		Gates Word Pronunciation Test
	Thurstone Identical Forms Test		Fry Test of Phonetically Regular Words
	Metropolitan Readiness Tests 1. Word Meaning 2. Listening		San Diego Inventory of Reading Attitude
4 class sub-sample	Roswell-Chall Auditory Blending Test	Gilmore Oral Reading Test	Gilmore Oral Reading Test
	Storytelling Test	Roswell-Chall Diagnostic Test	Roswell-Chall Diagnostic Test
	Detroit Word Recognition Test	Alphabet Letter Names	Alphabet Letter Names
		Roswell-Chall Auditory Blending Test	Roswell-Chall Auditory Blending Test
			Storytelling Test

D. Pupil Measures

The following are brief descriptions of the tests given to the children in the sample:

Murphy-Durrell - Diagnostic Reading Readiness Test - group test- Three subtests were used as follows:

1. Phonemes Test - This is a two-part test of 25 items. The child is asked to mark one of the four pictures that begins or ends with the same sound given in a word by the examiner.

2. Letter Names Test - This is a 52-item test. The child is asked to mark the letter corresponding to its name as given by the examiner.

3. Learning Rate Test - This is an 18-item test. Nine words are taught to the child through a variety of methods. One hour later the child is asked to recognize the words among three choices given.

Thurstone Pattern Copying Test - group test- Thirty-six forms are presented. Beside each is a half-completed identical form. The child is asked to complete the forms, which are of increasing complexity.

Thurstone Identical Forms Test - group test - This is a 60-item test of perceptual speed. In each item an abstract form is to be matched with an identical one placed among 4 other choices. There is a time limit of three minutes on the test.

Metropolitan Readiness Tests - group test - Two of the subtests of this battery were given as follows:

1. Word Meaning. This is a 16-item test of language comprehension.

For each item the child is asked to mark the picture that illustrates the word named by the examiner.

2. Listening. This is a 16-item test. The child is asked to attend to phrases or sentences, and then is to select one of 3 pictures which best portrays the situation or event described by the examiner.

Roswell-Chall Auditory Blending Test - individual test - This is a 30-item test. The child hears isolated word parts spoken by the examiner, and is asked to blend parts into a word. Only the first 15 items of the test were used.

Storytelling Test[1]- individual test - In this expressive language test the child is presented with four pictures describing a simple action story involving 2 animals. The child is asked to tell a story about the pictures. Description and sequence, and amount of story transition from one picture to the next is rated.

Detroit Word Recognition Test - A group test but given individually - This is a 40-item recognition test, consisting of words and phrases. The child is asked to match words or phrases to pictures on the same page.

Gilmore Oral Reading - individual test - This test has 10 passages of increasing difficulty. The child is asked to read each passage until a certain number of errors are made. A reading grade level score is determined by the accuracy of the reading. The rate of reading is also determined.

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[1] This is a subtest of the Reading Prognosis Test, by Feldmann and Mahler, from the Institute for Developmental Studies, New York Medical College.

Roswell-Chall Diagnostic Test - individual test - On this test the child is asked to give the sounds for single consonants, consonant blends and diagraphs, and long and short vowels. In addition, he is asked to apply this knowledge to phonetically regular words, and to show understanding word structure and syllabication.

Alphabet Letter Names - individual test - The child is asked to give the names for the alphabet letters.

Stanford Achievement Test, Primary I Battery - group test - Five subtests were given as follows:

1. Word Reading. This is a 35-item test. The child is asked to match one of four words to a pictured object or action.

2. Paragraph Meaning. This is a 38-item test. The child is presented with passages of increasing length and difficulty, with one or two words omitted from each. The task is to select the most meaningful word from four choices, to complete the paragraph.

3. Vocabulary. This is a 39-item test in which the child selects from three alternatives read by the teacher the one that completes the meaning of the statement, also read by the teacher. The items are of increasing difficulty.

4. Spelling. In this test, child is asked to write 20 words which have been presented to him both in isolation and in sentences.

5. Word Study Skills. This is a 56-item test consisting of four

subtests: 1 and 3 are auditory perception of beginning sounds; subtests 2 and 4 are auditory perception of ending sounds. In subtests 1 and 2, three words are read to the child from which he must select one having the same beginning or ending sound as the stimulus word. In these tests the child's attention is directed to the beginning or ending sound. In subtests 3 and 4, the task is essentially the same except that the stimulus word only is read to the child.

Gates Word Test - individual test - This is a 40-item test of recognition of familiar words. They are both regularly and irregularly spelled and also are graded in difficulty. The child is asked to say the words.

Fry Test of Phonetically Regular Words - individual test - This is a word recognition test composed of 30 regularly spelled words, graded in difficulty. The child is asked to say the words.

San Diego Inventory of Reading Attitude - group test - This test has 25 questions pertaining to attitudes about reading. As each is read aloud the child is asked to circle either yes or no in response to the question.

III

Teacher Measures

Three measures were constructed to identify or evaluate teacher opinion or performance concerning reading method. They are: a teacher questionnaire; a classroom observation inventory; and a teacher interview. Each is described below.

A. Teacher Questionnaire

1. Construction and Description

The teacher questionnaire was constructed by the investigators to determine the degree of emphasis that first grade teachers give to two important aspects of beginning reading, sound-symbol relationships and reading for meaning.

The questionnaire did not ask directly whether one or the other was emphasized. Instead, questions were designed to elicit responses such as: 1. The frequency with which the teacher used certain reading materials; 2. The percent of total reading time devoted to each of a series of beginning reading activities e.g., guided silent reading of basal readers, independent silent reading of trade books and supplementary readers, teaching and giving practice in developing a sight vocabulary, teaching and giving practice in word analysis skills; 3. Her own ranking in importance of certain goals for beginning reading proposed by various authorities in the field; etc. The questionnaire is reproduced in Appendix B. The items of the questionnaire are listed below with a brief description of each item.

1. The first item of the questionnaire listed eleven different types of materials which might be used in any given reading program, from basal reader series to teacher-made worksheets. The teacher was asked to indicate the frequency with which she used these materials; a. as an integral part of her program; b. as a supplementary part; and c. as materials never used.

2. On the second item of the questionnaire the teacher was asked what percent of the total reading time each week she spent on various reading activities: silent reading, oral reading, etc.

3. The teacher was asked on the third item to give the degree to which she followed the teacher's manual for the basal series; a. all the suggestions; b. most of the suggestions; c. some of the suggestions; and d. none of the suggestions.

4. The fourth item on the list of the questionnaire asked the teacher to rank from one to ten a list of the goals of first grade reading, in the order of importance to her program, the number one carrying the highest priority.

5. The fifth item asked the teacher which of the above goals in part 4 she would insist upon keeping if it were her task to reduce the number of goals in first grade reading.

6. The teacher was presented in the sixth item of the questionnaire

with four forced choices. She could choose one of two answers. One alternative, it was assumed, had a stronger meaning emphasis, the other a stronger sound-symbol emphasis.

7. The teacher was asked initem seven to rank five approaches to independent word recognition, from one to five, in order of the priority that each received in her program.

2. Coding

In the selection of teachers for the study, the items of the questionnaires were coded for sound-symbol or meaning emphasis. This enabled the investigators to place each teacher on a continuum; at one extreme the teaching of sound-symbol relations was emphasized and at the other extreme meaning was emphasized. Thus, from the tabulation of results, the investigators attempted to obtain a teacher sample with a balance of sound-symbol or meaning emphasis as well as experience or inexperience and educational background. A description of the questionnaire coding and tabulation of results follows.

In an analysis of item 1, most teachers made consistent use of basal readers, teacher's manuals and workbooks associated with the basal series. Most teachers assigned to each a rank of 1, denoting that it was an integral part of their programs. Differences were noted in the use of word games, teacher-made worksheets and devices for word analysis and phonics, teacher-made worksheets for developing comprehension, and experience charts.

The teacher-made worksheets were considered of particular importance in discriminating between sound-symbol and meaning teachers. A teacher must put considerable thought and effort into making her own materials. If she chose to do this for word analysis and phonics, or for developing comprehension, the investigator had some clue as to which she believed was of greater importance in first-grade reading. Thus the use of word games and teacher-made worksheets for word analysis and phonics were classified as sound-symbol activities and the teacher-made worksheets for developing comprehension and experience charts were classified as meaning activities. The frequency with which the teacher used the above materials was averaged and this mean frequency was tabulated for sound-symbol and meaning. If a teacher used meaning materials with greater frequency, she was rated as favoring "meaning" on this item, or if the opposite was true, sound-symbol. This became one item for classifying the teacher on the sound-symbol/meaning continuum.

In coding the teacher's responses on item 2, the following were rated as meaning activities:

1. Guided silent reading of basal readers
2. Discussion and dramatization of stories and other related language activities
3. Independent silent reading of trade books and supplementary readers

4. Supplementary activities to develop word meaning and comprehension skills

The following were rated as sound-symbol activities:

1. Oral reading of basal readers and supplementary materials
2. Teaching and giving practice in developing a sight vocabulary
3. Teaching and giving practice in word analysis skills

Time spent on correlated workbook excercises was omitted, for the sound-symbol or meaning emphasis was not clear. The total time spent on sound-symbol activities and on meaning activities was tabulated. If a teacher spent more time on one or the other kind of activity she was identified as sound-symbol or as meaning teacher on this item.

On item 3, the degree to which the teacher followed the suggestions of the manual gave further indication as to her SS or M status. The basal reader series used in the sample classrooms was essentially a meaning approach to reading. In many basal series,

> Reading is given a broad definition. It includes as major goals, right from the start, word recognition, comprehension, interpretation, appreciation, and application of the facts to the study of personal and social problems.
>
> Children start with "meaningful reading" of whole words, sentences, and stories as closely geared to their own experiences and interests as possible. From the start, silent reading is the preferred mode.[1]

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[1] Jeanne Chall, "Innovations in Beginning Reading," The Instructor, March, 1965, page 67. The analysis of the basal readers series comes from data gathered for the City College-Carnegie Reading Study, (mimeo), 1965.

If the teacher used all or most of the suggestions she was rated as meaning on this item. If she showed independence of the manual, choosing some or none of the suggestions, she was rated sound-symbol.

On item 4, the teacher was asked to rank from 1-10, in order of importance, the goals of first grade reading. These goals were classified as sound-symbol or meaning on this item.

Meaning: Developing rapid silent reading
Developing a rich and broad meaning vocabulary
Critical interpretation of what is read

Sound-Symbol: Ability to sound out words independently
Developing a sight vocabulary
Accurate oral reading
Learning the association of sounds in spoken words with the letters used to represent them.

An average was taken of the rank the teacher assigned to both meaning and sound-symbol goals. The teacher was classified as a meaning or sound-symbol teacher on this item if she assigned a higher priority to one or the other.

Two goals, developing broad reading interests and developing the ability to read a variety of materials for different purposes, were omitted in the final analysis. It was felt that these were very general projected goals and did not lend themselves to either a sound-symbol or meaning category. Furthermore, in no case did a teacher assign a high priority to these goals for first grade reading.

On item 5, the teacher was classified as a sound-symbol teacher if she chose to keep more sound-symbol goals than meaning goals. Or if she chose more meaning goals she was classified as a meaning teacher on this item.

On the forced choices in item 6, the teacher could choose only one of two answers. One alternative was classified as sound-symbol and the other as meaning. The teacher was classified as sound-symbol or meaning if she chose more of one or the other.

On item 7, the approaches to independent word recognition were ranked by the teacher from one to five. The approaches classified as meaning were picture clues and context and meaning clues. Those classified as sound-symbol were phonetic analysis and structural analysis. Identification by configuration was considered neither a meaning nor sound-symbol emphasis and was therefore omitted. A mean rank was found for the priority each teacher assigned to sound-symbol and meaning approaches to independent word recognition. She was classified as a meaning or sound-symbol teacher on this item, whichever approach received the higher priority.

Table 4 summarizes the teachers' responses on the seven items of the questionnaire that lent themselves to a sound-symbol or meaning classification. The following items were recorded for each teacher:

Table 4

Summary of teacher's responses to seven items on the questionnaire

Teacher	Rating	1. Supplementary material mean frequency	2. Per-cent of time	3. Use of T. manual and basal reader series	4. Goal rating mean rank	5. Total goal keeps-number	6. Forced choices-number	7. Word analysis methods mean rank	Score
A	M	1	50	SF 1b	3.7	4	1	2.5	5M, 1SS,
	SS	1.5	40		6.3	1	3	2.5	
B	M	1	40	HM 1b	5	all	2	2.0	4M, 1SS, 2
	SS	1	55		5.7		2	3.0	
C	M	1	40	MEM 1a	6	0	2	1.5	2M, 3SS, 2
	SS	1	50		3.8	1	2	4.0	
D	M	1	40	MM 1	6.2	1	1	3	1M, 3SS, 3
	SS	1	40	c	4.5	0	3	3	
E	M	2	45		6.8	2	1	2	2M, 4SS, 1
	SS	2	35	SF 1c	3.3	3	3	4.5	
F	M	2	45		5.5	2	3	1.5	3M, 3SS, 1
	SS	1.5	40	SF 1c	4.0	2	1	4.0	
G	M	2.5	25		7.0	1	1	4.0	7SS
	SS	2	50	SF 2c	3	4	3	1.5	
H	M	2	40		5.25	2	2	3.5	0M, 4SS, 3
	SS	2	45	HM 1c	4.25	4	2	3.5	
I	M	1	25		7		2	4.5	1M, 4SS, 1
	SS	2	60	HM 2c	3.25	—	2	1.5	
J	M	2	40	LL 1b	6.0	1	2.5	2	2M, 2SS, 3
	SS	2	40		5.2	1	1.5	4.5	

Table 4
(continued)

eacher	Rating	1. Supplement-ary mater-ial mean frequency	2. Per-cent of time	3. Use of T. man-ual and basal reader series	4. Goal rating mean rank	5. Total goal keeps-number	6. Forced choices-number	7. Word analy-sis meth-ods mean rank	Score
K	M	2	47	HM 1b	7.2	1	1	4.0	2M, 4SS, 1
	SS	2	38		3	2	3	1.5	
L	M	1	45		4.5	3	1	2.5	3M, 3SS, 1
	SS	2	55	MM 2c	4.5	2	3	3	
M	M	1	40		6.2	1	1	4.5	1M, 5SS, 1
	SS	1	50	MEM 1c	4.5	0	3	2	
N	M	1	40		5.7	1	1	4.5	1M, 5SS, 1
	SS	1	50	McM 1c	4.7	0	3	2	

1. The teacher's mean rank for her priority of use of supplementary materials, sound-symbol or meaning. (Item 1)

2. The percent of total reading time a teacher assigned to sound-symbol or meaning activities. (Item 2)

3. The degree to which she followed the teacher's manual and basal reader series. (Item 3)

4. The mean ranking a teacher assigned to the goals of reading for sound-symbol and meaning. (Item 4)

5. The number of sound-symbol and meaning goals of reading that the teacher insisted upon keeping if it were her task to reduce the number of goals in first grade reading. (Item 5)

6. The number of sound-symbol and meaning "forced choices" the teacher made when presented with a series of four reading situations. (Item 6)

7. The teacher's mean rank for her use of either sound-symbol or meaning approaches to independent word recognition. (Item 7)

An overall sound-symbol and meaning rank was assigned to each teacher based on how she used her time, what activities she deemed important, and what she preferred, as indicated by her responses to the seven items of the questionnaire. An example is given below to illustrate the process of assigning an overall rank, taken from Table 4.

On item 1, teacher A had a mean of 1.5 on her use of supplementary materials for sound-symbol reading activities, and a mean of 1 on materials for meaning activities. The number 1 indicated the highest frequency of use. A check was placed beside the M category to indicate her preference of M on this item.

On item 2, teacher A noted that she devoted 40% of her reading time to sound-symbol activities and 50% to meaning activities. A check was placed beside the M score to indicate teacher A's greater emphasis on meaning in reading.

On item 3, teacher A had a notation of SF, 1,b. SF refers to use of the Scott Foresman basal reader series. The number 1 refers to the frequency with which she used the teacher's manual, as an "integral" part of her program (see item 1 of the Questionnaire). The letter b indicates that she uses most of the manual's suggestions for a lesson (Item 3 on Q). When a teacher selected a or b on this item she was judged as using a meaning approach. If c or d is chosen, the teacher was judged as using a sound-symbol approach.

On item 4, teacher A, in ranking from one to ten the various goals of first grade reading, gave a mean rating of 6.3 to sound-symbol goals, and 3.7 to meaning goals. With 1 as the highest rank, teacher A gave priority to meaning goals, and therefore was rated as emphasizing meaning.

On item 5, where the teacher was asked which goals she would keep if some had to be eliminated, teacher A chose to keep 1 sound-symbol goal and 4 meaning goals. She was therefore rated meaning on this item.

Item 6 shows that when faced with alternative choices, meaning or sound-symbol, in certain reading situations, teacher A selected three sound-symbol choices and only one meaning choice. She was therefore rated as sound-symbol on this item.

On item 7, where the teachers were asked to assign a rank from one to five to various word analysis methods, with one as the highest priority, teacher A's mean rank for meaning and sound-symbol were the same, so she was assigned an equal classification on this item.

Teacher A had a total meaning classification of 5, one sound-symbol classification, and one equal or neutral classification. Thus she was considered to give a stronger emphasis to meaning than to sound-symbol relations in her first grade program. She was rated as a meaning teacher.

From the questionnaire, the seven items discussed above were the basis for several teacher variables used in the data analysis. These constituted the professed methods of the teacher. The variables are as follows:

Variable	
58	A teacher rating, on a 1-2 scale, where 1 indicates a mixed and 2 indicates sound-symbol emphasis upon reading instruction.
79	A teacher rating, on a 1-2 scale, where 1 indicates a mixed and 2 indicates meaning emphasis upon reading instruction.
60	A teacher rank on a 1-9 scale, where 1 indicates a strong meaning emphasis and 9 indicates a strong sound-symbol emphasis upon reading instruction.
81	A teacher rank on a 1-9 scale, where 1 indicates a strong sound-symbol emphasis and 9 indicates a strong meaning emphasis upon reading instruction.

59 A teacher rank on a consistency scale, 1-5, where 1 indicates teachers who mixed patterns of sound-symbol or meaning reading activities and where 5 indicates a strong pattern or preference for either meaning or sound-symbol activities.

Two additional teacher variables which came from item 2 on the questionnaire are as follows:

57 A teacher rank on a 1-9 scale, where 1 indicates a high percentage of time said to be spent on meaning reading activities and where 9 indicates a high percentage of time said to be spent on sound-symbol reading activites.

80 A teacher rank on a 1-9 scale, where 1 indicates a high percentage of time said to be spent on sound-symbol reading activities and 9 indicates a high percentage of time said to be spent on meaning reading activities.

It may be noted that variables 58 and 79 are the same, as are 60 and 81, 57 and 80. The scales have been reversed in each case so that either sound-symbol or meaning would correlate with other data coded on a low to high linear scale.

For items 58 and 79, the teacher rating was a count of the seven items; that method, sound-symbol or meaning, the teacher gave the greatest emphasis was used for the rating. If the teacher assigned equal weight to both methods, she was considered to be a "mixed" methods teacher.

In assigning a ranking for the items 60 and 81, each of the seven items from the questionnaire, as described on pages 19 and 20, were weighted. A meaning tally was weighted 1, a "mixed" or equal tally was weighted 2, and sound-symbol tallies were weighted 3. For example, teacher A on Table 4 has 5 meaning, 1 mixed, and 1 sound-symbol designations. These designations are weighted, in the same order, 5,2,3, giving a total of ten.

The range of possible weighted scores was from 7 to 21, or a 15 point scale. The scores were prorated to obtain an equivalent ranking on a nine-point scale. Table 5 gives the subsequent rankings for the teacher sample.

Table 5

Weighted scores and teacher rankings based on the seven items of the questionnaire

Teacher	Scores from 7 items on questionnaire	Weighted score ss 3 is 2, m 1	Ranking 1 M, 9 SS
A	5M,1SS,1	10	2
B	4M,1SS,2	11	3
C	2M, 3SS,2	15	5
D	1M,3SS,3	16	6
E	2M,4SS,1	16	6
F	3M,3SS,1	14	5
G	7SS	21	9
H	4SS,3	18	7
I	1M,4SS,1	15	7
J	2M,2SS,3	14	5
K	2M,4SS,1	16	6
L	3M,3SS,1	14	5
M	1M,5SS,1	18	7
N	1M,5SS,1	18	7

Variables 57 and 80 were constructed so that a comparison could be made between what the teacher said she did and what was actually observed in the classroom. It was possible to calculate from both the observation schedule and the questionnaire a percent of time spent on (1) phonics, (2) other sound-symbol activities such as, sight, or whole word recognition, and (3) meaning activities.

Item 2 of the questionnaire was used to obtain this information. The totals by teacher for the percentages varied from 75% to 100% of total reading time. All percentages were prorated to a base of 100%. The percentages were weighted as follows: phonics was given a weight of 3; other sound-symbol activities, such as sight or whole word recognition, were given a weight of 2; and meaning activities, such as guided silent reading were given a weight of 1. This same procedure was followed in prorating and weighting the percentages on the classroom observation inventory. The total scores for both questionnaire and observation inventory ranged from 137 to 235. Those scores were then prorated to a nine-point scale. Table 6 shows the rankings for both the questionnaire and the observation inventory. There was a bunching of teachers on the meaning side when percentages obtained were taken from the questionnaire. However, the percentages obtained through observation of what the teachers did were spread widely from one end of the continuum to the other (see Table 6).

Table 6

Proportion of time spent by teachers on reading methods, and resultant rankings, from both the questionnaire and the observation inventory

	Questionnaire					Observation				
Teacher	Phonics	SS	M	Weighted %	Rank	Phonics	SS	M	Weighted %	Rank
A	11	33	56	155	2[a.]	15	23	62	153	2[a]
B	6	38	56	150	2	1	36	63	138	1
C	18	29	53	165	3	16	25	59	157	2
D	13	53	33	178	4	7	39	54	153	2
E	11	47	42	169	3	20	29	51	169	3
F	18	35	47	171	3	0	37	63	137	1
G	12	59	29	183	4	0	57	43	157	2
H	25	25	50	175	4	1	42	57	144	1
I	18	27	55	163	2	50	15	35	215	7
J	18	39	44	176	4	4	36	60	144	1
K	25	25	50	175	4	60	15	25	235	9
L	25	30	45	180	4	0	79	21	179	4
M	22	33	44	176	4	23	36	41	182	4
N	27	33	44	176	4	38	20	42	196	6

a. where 1 is M and 9 is SS

Variable 59 is a teacher consistency ranking. Throughout the analysis of the questionnaire it was noted that many teachers reversed their meaning or sound-symbol positions on one or more items. A consistency scale was devised to indicate those teachers who showed strong or mixed patterns. The seven items on Table 4 were used for this purpose. On a 5-1 scale, if all seven items were checked sound-symbol, meaning, or equal, the teacher was assigned a rank of 5, the highest consistency. If six items in the same category were so checked, the teacher received a rank of 4, and so on.

B. Classroom Observation Inventory

1. Construction

One of the major purposes of the study was to relate what transpired in the classroom during the reading sessions to pupil achievement. The purpose of the Classroom Observation Inventory was to try to pin down what the good teacher did, where good is defined as having a beneficial effect on the reading achievement of the children. Also, the inventory would make possible comparisons of what the teacher was observed to do during the reading lessons with what she said she did as reported on the questionnaire and in the interview.

To this end, work was begun on the construction of a classroom observation inventory that would give objective information on the content of a reading lesson, on various teacher characteristics, as well as teacher-pupil interactions. Existing schemes for describing pupil-teacher interactions in the classroom by Flanders (1960) and by Pauline Sears (1964)

also were studied for possible use.

A preliminary form of an observation inventory was developed. It was tried out in several classrooms together with the Amidon-Flanders Interaction Analysis. Initial reaction to the preliminary observation form was positive, although the observers thought it would be better to have a tighter set of rating scales to assure comparability of judgment, greater reliability, and ultimate quantification. The Amidon-Flanders Interaction Analysis, although it showed promise, was thought to be of secondary value to the main purpose of the study and was therefore discontinued.

The classroom observation inventory was therefore revised and tried out in the classroom. This revision included adaptations of classroom observation scales developed by the Bank Street College of Education (1964). These included an approval-disapproval scale for rating the teacher's technique for management and discipline, a closeness vs. distance scale for rating teacher's contact with children, an approach to learning scale for rating the teacher's techniques for imparting knowledge, a scale on class tension, and a scale on structure vs. license for rating the teacher's organization of classroom activities. Observers making independent judgments in the same classrooms indicated that the revision was workable. It was instituted for use in all classrooms beginning in November.

The observation scale was revised to obtain greater clarity of items, to quantify as many items as possible without reducing their value, and to measure inter-judge reliability in an informal way. To check the latter point, rater reliability check was made for all of the items on the first revision of the observation inventory. Each of the quantitative scales was coded from one to nine and comparisons were made. The questions that were qualitative were more difficult to compare, but each question was summarized in order to determine and compare the range of responses. Thus, those items which showed high inter-judge consistency and those which did not could be identified. Items showing low consistency were discussed with each of the observers in an attempt to correct any ambiguity that may have existed in the wording of the items. In some cases more precise definitions of each point along the quantitative scale were made. Items that showed high inter-judge consistency were left in their original form.

Whenever it was possible to quantify an item without losing the value of that item, this was done. An example of such is the quantification of the original comfort of class item.

Where scales contained ambiguous components, two scales were introduced in the revision so that observers could be more specific in their responses. For example, the degree of approval or disapproval scale was supplemented by a scale asking the observer to judge the degree of teacher objectivity in her reactions to the children's behavior. This additional measure gave the original scale more meaning in terms of understanding the individual teacher and class situation.

In the case of the part on extent of class tension all of the items were discarded and an entirely new set of items were devised. Original items used the word tension in an ambiguous way, so that each observer had different conceptions of the term. The revised scale asked for judgments based on the behavior observed in the classroom and avoided the difficulty of divergent interpretations.

Several changes were made in the quantitative summary of the reading lesson on the last pages of the observation inventory. First, the observer was asked to use the summary sheet which best described the major lesson or lessons observed. Modifications of the lesson were listed on that sheet. For example, when observing a whole word recognition lesson where a teacher gave some phonic clues the observer rated the use of phonics as part of the whole word recognition lesson as opposed to the earlier method of classifying it under the phonics section.

The second change in this part was in stating the percent of time for each reading activity rather than simply checking whether it was used as a major or minor part of the total lesson. Percentages were also used to indicate how much of the observed reading period was devoted to a particular kind of activity. The use of percentages avoided different interpretations of what "major" or "m inor" meant and also differentiated between those activities used only once or twice and those methods used as an integral part of the lesson.

A part asking for information on the reading group not working with the teacher during the reading period was added. This part took cognizance of the types of related reading activities engaged in by the children. It was hoped that such information would throw light upon any independent activities that might affect the children's ability to read.

The final revision of the Classroom Observation Inventory was completed and used from the beginning of January, 1965 through the end of May, 1965. Although the final version differed from the second version on only a few points, it was expected to enable the observers to report more precisely on the interactions in the classroom. All previous data from the second observation inventory were transposed in terms of the revised inventory for more uniform coding of information. This was easily done since the majority of the items on the two forms were still the same; also the free-running protocols on the second version permitted the observers to make judgments on most of the new and revised items for the final observation inventory.

The 56 items of the new observation inventory were tested for reliability. For twenty lessons, two staff members observed the same lesson and each rated the lesson independently. These judgments were used for the reliability ratings. Intraclass reliabilities[1] are high for most of the items, as shown on Table 7. Only 6 of the items fall below acceptable significance levels. It was concluded that items on observation scale were sufficiently reliable to be used for data analysis in the study.

2. Description

The final classroom observation inventory contained two sections. The first section asked for a free-running account of the lesson. The observer recorded the events and sequence of activities, with time limits as they occurred, and at the same time noted whether the activity was directed

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[1] Guilford, J.P. Fundamental statistics in psychology and education. (4th ed.) New York: McGraw Hill, 1965, pp. 298-300.

Table 7

Intraclass correlations for rater reliability for items from classroom observation inventory

Item	Variable no.	r
Amount of reinforcement	1	.87
Number of errors	2	.63
Teacher talk vs. student talk	3	.90
Pupil talk vs. pupil practice	4	.92
Classroom participation	5	.86
Reading behavior:Teacher reaction	6	.88
Reading behavior relation: Teacher reaction	7	.84
General management: Teacher reaction	8	.83
General management relation: Teacher reaction	9	.90
Closeness vs. distance A	10	.82
Closeness vs. distance B	11	.95
Approach to Learning: information	12	.88
Approach to Learning: thinking	13	.81
Teacher expectation	14	.95
Children's behavior	15	.94
Comfort of teacher	16	.68
Comfort of children	17	.87
Class structure	18	.88

Table 7
(continued)

Item	Variable no.	r
Competence	19	.91
WWR: quality [a]	20	.88
WWR: percent of time	21	.96
WWR: simple look-say	22	.98
WWR: write or copy word	23	.98
WWR: configuration	24	.00*
WWR: meaning, picture, context	25	.94
WWR: phonics	26	.49
WWR: spelling	27	.80
WWR: visual matching, no talk	28	.00*
WWR: visual matching, talk	29	.88
WWR: isolation	30	.98
WA: quality [b]	31	.92
WA: percent of time	32	.99
WA: listening, rhymes, sounds	33	.92
WA: listening and pictures	34	1.00
WA: sounds, printed letters	35	.77
WA: sounds, printed words	36	.81
WA: sounds, printed words and meaning	37	.73

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* not significant at .05 level

[a] whole word recognition

[b] word analysis

Table 7
(continued)

Item		Variable no.	r
WA:	structural analysis	38	.57
WA:	alphabet - visual matching	39	.00*
WA:	alphabet - matching with names	40	.00*
WA:	spelling	41	.00*
CR:	quality [c]	43	.90
CR:	percent of time	44	.94
CR:	predominant mode	45	.96
CR:	oral reading questions	46	.83
CR:	oral reading, plain	47	.91
CR:	silent reading & questions	48	.94
CR:	silent reading, plain	49	.75
CR:	discussion of pictures	50	.92
CR:	discussion of stories	51	.97
CR:	discussion of grammatical structure	52	.95
CR:	discussion of semantics	53	.91
CR.	phonic cues stressed	54	.97
CR:	reading with eyes	55	.98
Other group involvement		56	.98

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* not significant at .05 level

[c] connected reading

to the whole class or to a group (whether to the high achieving, middle, or low group). In addition, the observer noted, at five minute intervals, the number of children not participating in order to obtain a measure of interest and involvement of the children.

More detailed instructions for recording this running account of the lesson are included on page one of the Classroom Observation Inventory in Appendix C.

The second section included a series of rating scales and questions on behaviors, attitudes, and interactions between the teacher and pupils specific to reading and to general classroom management.

The observers were instructed to fill out this second part of the observation schedule either during the lesson, or immediately following the lesson, when their impressions were still fresh. They could refer back to their full protocols for specific information. Indeed, for many of the scales and questions reference back to the free running description was a necessity, especially for the items on reading and also for the more general questions on management and attitudes.

The scales and questions fell roughly within the following categories:

1. The amount and kind of practice in reading engaged in by the pupils. These scales required fine distinctions since they were used not only to determine what actually was done in reading, but to rank the teachers on the sound-symbol/ meaning continuum. Toward this end, the schedule included scales on the proportion of teacher talk to pupil talk and

practice, the proportion of pupil talk to pupil practice of reading. Additional scales were to be checked to indicate how the lesson was taught, i.e., whether or not new words were presented in isolation or in connected phrases and, in word analysis lessons, and whether or not sounds were always isolated or presented through a whole word. The quality of the lessons and the various aspects of the lessons were to be rated on a scale from excellent to poor.

Related to the above were scales and questions dealing with the extent of errors made by the pupils as well as the ease or difficulty of the lesson (pages).

2. Teacher's reaction with regard to pupils' responses. These included judgments on the amount and kind of reinforcement given by the teacher during the reading lesson, how pupils were reinforced for correct responses, and how errors were handled (page).

3. The broader aspects of classroom behavior and teacher-pupil interaction[1] as follows:

a. A scale on the extent of class participation (page).

b. A scale concerned with the teacher's approval-disapproval, to be rated separately for reading behavior and for general management and discipline. This rated whether the teacher's reaction to the children's responses was primarily one of praise and approval or blame

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[1] Adapted by the investigators from The Bank Street College of Education Scales. From Personality aspects of teaching: a predictive study, Genet. Psycholog. Monogr., 1964, 69, pp 101-149.

and disapproval (page 6).

c. A scale on closeness vs. distance, i.e., whether the teacher was remote or in contact with the children (page 7).

d. Approach to learning, i.e., whether the teacher emphasized information and skills or the stimulation of thought (page 7a).

e. The degree of class structure, i.e., whether the teacher had a structured or loosely organized classroom situation (page 8).

Also included in this area were other scales on classroom atmosphere:

f. The behavior that the teacher expected of the children i.e., whether restrained and controlled or permissive (page).

g. The actual child behavior observed i.e., whether highly controlled or uncontrolled (page).

h. The comfort of the teacher and pupils (page).

4. Teacher's competence, ranging from excellent to very poor. This is a summary judgment by the observer of the teacher's total performance and reflected the assumption as to whether or not the children seemed to be benefitting from her presentation.

5. What the group not working with the teacher did during the observed lesson, as well as the involvement of the group in their assigned task (page 10).

Generally, an attempt was made to be as inclusive as possible. Any aspect of teacher behavior that could be related to outcomes in pupil achievement, especially with regard to particular practices and emphases in the teaching of reading, was included in the classroom observation inventory. So little is known about the effect of teacher behavior on pupil achievement that the investigators preferred to err on the side of overinclusion. At the same time they wished to determine whether some of the behaviors and attitudes could actually be observed and described with any degree of reliability and objectivity.

3. Coding

Since about 75% of the items in classroom observation inventory were in the form of rating scales, they were assigned a numerical index of 1 to 9 on the various points checked. However, for some of the scales only a 5 point index was used. An attempt was made to assign the higher index to the end of the scale that was anticipated by the staff to have the most positive relationship to pupil achievement.

The remaining 25% of the items were not scaled numerically but were written commentaries by the observer. These items were analyzed for content and placed on a 9 or 5 point scale by members of the staff. In coding these items, all of the observer's comments over the year on a particular item were listed. It was found that these responses to an item varied by degrees which could be placed on a numerical scale and coded.

Because of the pilot nature of this study and the lack of precedence in the scaling of this type of qualitative rating it was necessary to be subjective in the judgments made. The judgments that were made were based on the experience of the investigators, as well as on a screening of the related theoretical literature. Described below are the qualitative items which were scaled.

1. Amount of individual attention given (page)

The scale rates the extent to which an individual child was helped by the teacher in the classroom situation. It attempts to measure the teacher's provision for the particular strengths and deficiencies of the various children. The scale lists individual help in class given very often at one end to no individual help given at the other end. The ratings are seen below. Each teacher's response in the category was rated and a mean of the ratings was used as her final designation.

9	7	5	3	1
Individual help in class given very often	Individual help and other indications given fairly often	Other indications of indirect concern with individuals given sometimes	Little individual help	No individual help

2. Difficulty of lesson

The scale evaluates the lesson in terms of its ease or difficulty for the children (page). The scale goes from just right all the time to too hard or inappropriate most of the time. Each teacher's responses in the category were rated and a mean was taken of the ratings. The range of ratings is given below.

9	7	5	3	1
Just right all the time	Usually just right	Sometimes just right	Too easy most of time	Too hard or inappropriate most of the time

3. Are individual children taken into account?

The scale gives a positive or negative rating to the question of whether individual children were taken into account (page). A simple yes - no judgment was required of the observer, so a 2 point scale was used. The response assigned the majority of times to each teacher was used as her rating.

4. Why was classroom participation high?

The scale summarizes the predominant ways used by each teacher to obtain high participation (page). This scale differs from the others in that there is no continuum but rather descriptions are given weight ; they are given below.

A	B	C	D	E
Teacher personality was warm and accepting	Teacher uses many interesting and appropriate methods	Expectations are clear	Children are bright	Teacher demands attention in punitive way

The 9-point rating scale was devised by scaling varying combinations of the five characteristics:

9	8	7	6	5	4	3	2	1
ABC	AB	BD	CD	A	B	C	D	E

5. How does the teacher react to non-participating children?

The scale rates the way the teacher reacted to the children not participating in the reading lesson (page 5). It is a five point scale assigning a score of 5 to always tries to involve children in positive manner and a score of 1 to usually takes severe punitive action. Each teacher's responses in the category were rated and a mean rating was then assigned to each teacher. The scale is given below.

5	4	3	2	1
Always tries to involve children in positive manner	Usually tries to involve etc.	Ignores	Usually uses mild punitive action	Usually takes severe punitive action

6. How does the children's behavior affect the learning situation?

The scale rates how disruptive or conducive the children's behavior was to the learning situation (page). It is a judgment of the classroom atmosphere as affecting the learning situation. Ratings for each teacher's responses were given and a mean of the ratings was found. The scale goes from very conducive to very disruptive in nine steps:

9	7	5	3	1
Very conducive	Moderately conducive	Neutral	Moderately disruptive	Very disruptive

7. How are errors handled?

The scale rates how the teacher handled errors made by the children (page). It is a judgment of how much help was given the children in working through their errors. The teachers were given mean ratings as on the previous scales. The scale goes from gives clues and helps work through answers to shows annoyance or reprimand. This scale is presented below:

9	7	5	3	1
Gives clues and helps work through answers	Encourages, other cues	Calls another child or gives answer herself	Ignores error	Shows annoyance or reprimands

8. Interest of materials.

The scale explores the degree of interest the children showed in the materials presented (page). The usual mean ratings were found for each teacher. The rating goes from very interesting to dull.

9	7	5	3	1
Very interesting	Quite interesting	Moderately interesting	Not very interesting (quite dull)	Very dull (not interesting)

Appendix D contains an observation schedule marked for items that were scaled as well as the scale points assigned, as well as for items that were analyzed by content analysis.

Items from the observation inventory were used to classify teachers as to their particular emphasis in reading. Each teacher was placed on a sound-symbol/meaning continuum. At one end were those teachers who tended in the observed lessons to put greater stress on learning the symbols for either spoken words or parts of words (sounds), and at the other end were those who put greater stress on relating the presented words to meaning. Those rankings were used in variables 70 and 83 in the data analysis.

A composite score, to determine the percentage of sound-symbol and meaning instruction used by each teacher, was calculated. This score was based on a weighting of each of the items that involved judgments about use of sound-symbol or meaning activities. These were variables 4, 21, 25, 30, 32, 42, 44, 47, and 54.

The mean percentage of time given to each of the three types of lessons, whole word recognition, phonics, and connected reading was determined for each teacher (variables 21, 32, 44). The items under each of these sections were then classified as primarily sound-symbol or meaning instruction. Since this section of the observation schedule was most representative of the teacher's emphasis, it was given a weight of 80 percent of the final composite sound-symbol/meaning score.

The scale of percentage of teacher talk to percentage of pupil practice (variable 4) seemed a meaningful supplementary scale. It was hypothesized that meaning teachers would spend a greater amount of time talking; therefore, a rating of more teacher talk would indicate a stronger meaning emphasis and vice versa. This rating was given a 10 percent weighting.

The final 10 percent of the weighting was shared equally by three scales, variables 30, 42 and 54. They were given relatively low weighting because they were judged to be of lesser importance than the other variables. The first scale under Whole Word Recognition section, variable 30, was a measure of whether the teacher taught whole word recognition in connected phrases or in isolation. It was thought that a teacher who was more concerned with meaning would tend to use connected phrases more frequently in teaching word recognition.

The second scale, variable 42, was part of the Word Analysis section and gave information as to whether a teacher isolated a sound or always used it in a word during word analysis skill lessons. It was felt that the teachers who have a sound-symbol orientation would more frequently isolate the sound rather than use it in a word.

The third scale was part of the Connected Reading section, variable 54, and measured the extent to which the teacher called the children's attention to phonic, structural and spelling clues already learned, especially when an error was made. The sound-symbol teacher, it was thought, would be expected to give more sound-symbol clues, even during the connected reading activity.

These various scales were weighted and a final score of percentage of meaning and percentage of sound-symbol was thereby attained and labeled.

Table 7, on pages 38, 39, and 40, gives the weighting for each of the teachers on the three reading methods and her ranking on the primary emphasis scale.

C. Interview

1. Description

The fourteen teachers participated in one intensive interview during the year. The interview was another instrument to determine more fully the teacher's theories and practices concerning beginning reading instruction, particularly those practices which might not be evident during the classroom observations. It was also an attempt to give the teacher greater freedom to express her ideas than she had been given on the questionnaire.

Material from the interviews served two purposes. Some parts of it were analyzed for content and then quantified for inclusion in the data analysis. Other parts were used qualitatively.

For this purpose a set of questions was prepared. The questions fell into three broad categories:

1. Questions which asked for a description of the teacher's reading program.
2. Questions regarding the theoretical basis and goals of the teacher's program.
3. Questions regarding the teacher's background in reading instruction and her current sources of information.

The interviews were conducted by members of the staff in the late fall of 1964 and first months of 1965. They took from 1 to 2 hours. The two replacement teachers were interviewed in the spring of 1965.

Questions which fell into the first category, a description of the teacher's program, included items 1, 2, 3, 4, 6, 7, 8, 9, 10, 17, 18, and 22 (see Appendix D). These questions asked for a description of her readiness program, the materials used for developing readiness, and how much time was devoted to this aspect of reading instruction. She was also asked to describe how she started the children on reading, when she introduced them to pre-primers, and what specific materials she used for this stage. She was also asked for general information regarding her daily program, i.e., the amount of time devoted to different aspects of reading, to activities related to reading (writing, speaking, listening, etc.) and to non-reading activities. Also included was a question on how she related these others to the reading lessons.

The second group of questions asked for information on the theoretical basis and goals of her program, items 5, 11, 12, 13, 14, 15, 16, and 23. Questions were asked such as how did she select her reading program, why does she follow or omit certain parts of the basal reader program, what her immediate and long term goals were for the particular class she was teaching, etc.

The third category of questions concerned the teacher's sources of information about reading and reading programs. Items 5, 11, 16, 19, 20, and 21 covered that area. Examples of such questions are: "Where did you get the most valuable suggestions regarding first grade reading?" "Are you following a supervisor's suggestion?" "How do you keep up with current practices in the teaching of reading?" Information was sought about the amount of reading instruction the teacher had received during her earlier training.

2. Coding

The interviewers' notes were prepared for content analysis. It was decided to list each question and sub-question on tabulation sheets and then to make abbreviated notes for each teacher from the interview reports. It was then possible to quickly survey all fourteen teacher responses to any particular question. In some cases the responses had sufficient range to permit a quantitive scale. Eight items were so quantified and added to the list of teacher variables. Because of the lack of structure in the interview situation and different interpretations of the questions , it was often necessary for the investigators to make subjective judgments.

The scales and ranges are described below:

1. Type of readiness program (Quest.8). Teacher responses ranged from general language activities to teaching specific reading skills, such as auditory and visual discrimination exercises, to phonics and word and letter matching. A scale of 1 to 5 was established ranging from "global" to "specific" readiness activities, based on the definitions already established for meaning and sound-symbol aspects of reading.

    1- Mostly language and pictures (Scott Foresman) readiness program.

    2- Pictures, language and auditory and visual discrimination

    3- Auditory and visual discrimination

    4- Phonics, games, matching letters or words

    5- Matching of letters and words (Houghton Mifflin) rhyming and visual discrimination.

2. When reading activities were started (Quest.9). Responses to this item ranged in time from mid-September through November. These responses were placed on a 5 to 1 scale, from an early to late start.

5 - Mid-September
4 - Beginning October
3 - Mid-October
2 - End of October - beginning of November
1 - Mid-November or later

3. When children were first grouped for reading instruction (Quest. 6). Responses to this question were placed on a nine-point scale with those teachers who grouped their children early in October assigned a value of 9 , to those who established no grouping by May assigned a value of 1 , as follows:

9 - October
8 - November
7 - December
6 - January
5 - February
4 - March
3 - April
2 - May
1 - No Grouping

4. How much does the teacher use the manual accompanying the reading series used (Quest.11). Teacher responses ranged from extensive use to "No, never use it." The teacher's responses were placed on a five-point scale as follows:

5 - No use
4 - Very little
3 - 50%, "fairly often" or flexible
2 - Follows general method with considerable dependence on manual
1 - Follows manual closely

5. What are the teacher's specific expectations for class achievement in reading at the end of grade 1 (Quest. 15). This question elicited a variety

of responses, from establishing acceptable work habits, to completing the primer or completing all the books in the series for the first grade and gaining independent word attack skills. The responses were placed on a 1 to 5 "general" to "specific" scale.

5 - Ability to read on second grade level
4 - Completion of first grade reader
3 - Completion of pre-primer and primer
2 - Vague
1 - Every student at his level

6. Teacher rating of the level of ability of her pupils (Quest. 17). Responses to this question were placed on a three-point scale.

3 - Above average
2 - Average
1 - Below average

It was our impression that the responses to this question reflected the school administration's grouping policy. Some of the schools grouped the classes by ability; hence the teacher's rating may have reflected the initial judgment made by the administration.

7. Amount of teacher training in reading courses (Quest. 20). Responses were placed on a three-point scale.

3 - Undergraduate and graduate courses in reading
2 - Inservice training in reading courses
1 - General methods course in normal school or college

8. What effort is made to keep up with the reading field (Quest. 21). Responses ranged from chatting with other teachers over coffee to attending professional meetings and reading journals, etc. A three-point scale was devised.

3 - Considerable reading of educational journals and Board of Education bulletins, plus attendance at professional meetings

2 - Some reading, mostly reports in popular magazines and newspapers, and some attendance in inservice courses

1 - No reading, all information from hearsay and teacher's manual

IV
Primary Data Analysis

Several analyses were carried out to provide information about the questions raised in the study. The major questions centered around the interactions of the teacher's professed reading methods, methods she was observed to be using, and the children's initial characteristics, all as related to reading achievement at the end of grade one. Subsidiary investigations were concerned with the relationship among pupil and teacher measures obtained in October, January and June, as well as with an analysis of what factors were actually measured in both the pupil and the teacher measures and ratings.

Chapter IV presents a discussion of the main analyses, while Chapter V is concerned with the subsidiary analyses.

Analysis of Variance

The primary investigation in the study concerned the effect of the teacher's style and characteristics as well as her interpretation of reading method on her pupils' reading achievement scores both in January and in June of the first grade year. To gauge that effect, an analysis of variance design was first used. Since all 83 teacher characteristics could not be used, eight variables judged by the investigators as probably having a positive effect on reading achievement scores were chosen from the 83. Those eight variables came from the Classroom Observation Inventory. They were:

	Variable No.
1. overall competence	19
2. primary emphasis in reading	70
3. amount of class participation	75
4. amount of praise or disapproval given during reading lesson	6
5. appropriateness of lesson in terms of difficulty level	72
6. classroom structure	18
7. attention given to individual differences	71
8. thinking approach to learning	13

Twenty-one dual combinations of the eight variables were used as independent variables in the analyses. Those combinations are shown in Table 8.

A two-way analysis of variance was run for each of the test variables and pupil characteristics, using each of the 21 teacher variables, a total of about 900 analyses in all. A range of N's from 330 to 200 were used in the 12-class sample and from 120 to 88 were used in the 4-class sample in the various analyses. The program used gave F ratios for cell differences, main effects differences, and interaction effects, or a total of seven F ratios for each analysis.[1]

The resulting data were analyzed according to time when pupil tests were given as follows: 1. those measures which were given in

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[1] The data for the cell differences are not reported because they were judged to be less useful than the other F ratios presented here.

Table 8

Teacher Characteristics Combined for 21 Groups Used in Analysis of Variance

Group No.	Variables
1.	Competence[a] with Primary Emphasis
2.	Approach to Learning with Primary Emphasis
3.	Participation with Approval-Disapproval
4.	Participation with Appropriateness
5.	Participation with Class-Structure
6.	Participation with Competence
7.	Participation with Approach to Learning
8.	Participation with Individual Differences
9.	Approval-Disapproval with Class-Structure
10.	Approval-Disapproval with Competence
11.	Approval-Disapproval with Individual Differences
12.	Class-Structure with Appropriateness
13.	Competence with Appropriateness
14.	Class-Structure with Competence
15.	Approach to Learning with Appropriateness
16.	Individual Differences with Appropriateness
17.	Approach to Learning with Class-Structure
18.	Class-Structure with Individual Differences
19.	Approach to Learning with Competence
20.	Competence with Individual Differences
21.	Approach to Learning with Individual Differences

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[a] **Abbreviations for Tables 9, 10, 11**

Competence: Compet. **Class Structure: Class-Str**

Approach to Learning: Appr-Learn **Individual Differences: Ind-Dif**

Participation: Partic **Primary Emphasis: Prim-Emph**

Approval-Disapproval: App-Dis

Appropriateness: Approp.

October; and 2. those measures given in January and June.

If the 21 teacher variable groupings had any significant effect on grade one reading achievement, significant score differences would be expected on the January and June pupil measures, reflecting those teacher differences. However, the October pupil scores would not be expected to reflect the teacher variables in a similar manner, since the pupils had not been sufficiently exposed to the teacher for her to influence their readiness and pretest scores. If any of the October measures were found to show score differences in the same direction as the January and June measures, then it would not be certain that the January and June score differences were influenced only by the teacher characteristics and not by the pupils' initial skill differences.

Tables 9, 10, and 11 summarize the significant pupil measure differences for the 900 analyses. Because of the amount of data analyzed, it was not possible to include the usual tables for the analysis of variance; instead only the number of significant F ratios are reported by teacher variable grouping, in Tables 9, 10, and 11.

Table 9 shows the number of significant main effects differences and interaction effects found for each of the initial October pupil measures. As can be seen, there were a sufficient number of significant pupil measure differences found (178 of a possible 546) to conclude that there were indeed initial skill and test score inequalities for most of the pupil variables. For that reason, analyses of covariance, using initial pupil skill

Table 9

Significant main effects and interaction effects for the initial October pupil measures

Pupil Variable	Teacher Variable Compet.	Appr. Learn	Partic.	Approp.	Class Str.	Ind-Dif.	Prim. Emph	App-Dis.	Total Interactions
Chronological Age	3		1	2					
Ethnic Class							1		
School experience prev. to grade 1	6		2			6			6
M-D Phonemes	3	1	1			6	2	4	5
M-D Letter Names		2	6			6		4	5
M-D Learning Rate	6	1	4			2	1	4	5
Met. Listening	4	4	5		2		1	4	4
Met. Word Mean		2	3					2	3
Thurst. Ident. Forms	6	5	6		4	3	1	4	3
Thurst. Patt. copy		1	1		4			4	5
Storytelling		4		1		2		2	
Detroit Words		4				1		4	
Auditory Blending		5		2		3		4	
No. of possible main effects	7	6	6	5	6	6	2	4	
No. of possible interaction effects									21

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[a] The total number of interactions only is presented; the interactions are not categorized by the 21 teacher groupings.

differences as covariates, were undertaken. Pages 69ff describe those analyses.

Tables 10 and 11 show the significant main effects differences and the interaction effects for each of the January and the June measures, using the teacher measures such as Competence and Primary Emphasis as independent variables. Although the significance of such results may be lessened by the finding of skill differences in the initial October measures (see Table 9), some conclusions were tentatively drawn from the January and June data.

Some patterns emerged in evaluating the main effects results for the January measures. First, three teacher characteristics - Thinking Approach to Learning, Classroom Participation, and Approval-Disapproval - showed major relationship to four of the five January pupil measures: Gilmore Accuracy, Alphabet Names, Auditory Blending, and Roswell-Chall Consonant Sounds. The Roswell-Chall Consonant Combinations subtest did not seem to be associated so often to those three teacher variables. A possible explanation is that few children scored on that test in January, so teacher influence on the skills measured by the subtest might be minimal.

The teacher variable Appropriateness of the Lesson was associated with the same four January measures from 60-100% of time it was used as an independent variable. Again, that teacher variable had lesser effect on the R-C Consonant Combinations subtest than on the other four tests.

Table 10

Significant main effects for January and June tests
(group with high value of teacher characteristic has higher mean)

Pupil Test	Teacher Characteristic							
	Compet.		Appr-Learn		Partic.		Approp.	
	No.	% of poss. effects	No.	% of poss. effects	No.	% of poss. effects	No.	% of poss. effects
Gilmore Accuracy (Jan)			6	100	6	100	5	100
Alphabet Names (Jan)			6	100	6	100	4	80
Auditory Blends (Jan)			6	100	6	100	4	80
R-C Consonant Sounds (Jan)			6	100	6	100	3	60
R-C Consonant Combinations (Jan)			3	50			1	20
S.A. Word Reading	2	28	6	100	5	83	2	40
S.A. Paragraph Meaning			6	100	6	100	1	20
S.A. Vocabulary	3	43	6	100	6	100		
S.A. Spelling	3	43	6	100	6	100	1	20
S.A. Word Study	4	57	6	100	5	83		
Fry Test			4	67				
Gates Test	1	14	6	100	6	100	1	20
R-C Consonant Sounds								
R-C Consonant Combination			1	17	6	100		
Gilmore Accuracy			3	50	4	67	1	20
Alphabet Names			3	50	6	100		
Auditory Blends			2	33	5	83	1 1	25[a] 25
Storytelling			1	17	6	100		
Attitude Inventory	1	14	6	100	5	83	5	100
No. of possible significant effects	7		6		6		5	

Table 10
(Cont.)

Pupil Test	Teacher Characteristics Class-Str. No.	 % of poss. effects	 Ind-Df. NO.	 % of poss. effects	 Prim-Emph. No.	 % of poss. effects	 App-Dis No.	 % of poss. effects
Gilmore Accuracy (Jan)			4	67[a]	1	50	4	100
Alphabet Names (Jan)							4	100
Auditory Blends (Jan)							4	100
R-C Consonant Sounds (Jan)			3	50[a]			4	100
R-C Consonant Combinations (Jan)			2	33[a]			2	50
S.A. Word Reading	3	50	1	17[a]	1	50	3	75
S.A. Paragraph Meaning	1	17	1	17[a]	1	50	1	25
S.A. Vocabulary	5	83					2	50
S.A. Spelling	5	83			1	50	3	75
S.A. Word Study	6	100			1	50	1	25
Fry Test			2	33[a]			4	100
Gates Test			1	17[a]			4	100
R-C Consonant Sounds					2	100		
R-C Consonant Combination							4	100
Gilmore Accuracy			2	33	1	50	1	25
Alphabet Names							4	100
Auditory Blends			2	33[a]	1	50	4	100
Storytelling							4	100
Attitude Inventory			2	33			4	100
No. of possible significant effects	6		6		2		4	

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[a] group with low value of teacher characteristic has high mean

Table 11

Significant Interaction effects for January and June tests

Pupil Test	Group 2 Prim-Emph. Appr-Learn	 4 Partic.-Approp.	 6 Partic.-Comp.	 10 App-Dis Comp.	 11 App-Dis. Ind-Dif.	 12 Class-Str. Approp.	 21 Appr-Le Ind-Dif
Gilmore Accuracy (Jan)					1		1
Alphabet Names (Jan)					1		
Aud. Blends (Jan)							1
S.A. Word Reading	1		1	1		1	1
S.A. Para. Meaning	1			1			
S.A. Vocabulary	1			1			
S.A. Spelling	1			1		1	
S.A. Word Study	1			1			
Fry Test	1						
Gates Test		1	1	1			1
R-C Consonant Sounds					1		
R-C Cons. Combinations		1					
Gilmore Accuracy -post					1		
Gilmore Rate					1		
Alphabet Names					1		
Aud. Blends					1		1
Storytelling		1					
Attitude Inventory	1	1		1	1	1	

The teacher variable, Attention to Individual Differences, was related to three of the five tests, the Gilmore Accuracy and two Roswell-Chall subtests, all in the unexpected direction that the less attention paid to individual differences, the higher the test scores. The teacher variable Primary Emphasis, in this case a sound-symbol approach, showed an association only with the Gilmore Accuracy test score, but not on the other tests which were essentially decoding tests.

Two of the teacher characteristics, Competence, and Structure of the Class, were not related to the January measures.

In summary, if initial differences are not taken into account, then several teacher characteristics seemed to be related to pupil achievement as early as January of the first grade year. They were a thinking approach to learning, high class participation in the lessons, and a balanced amount of approval and disapproval in response to the pupils' reading behavior. The appropriateness of the difficulty level of the reading lesson, though less strong a variable, also seemed to be associated with pupil achievement in January. A sound-symbol approach within an eclectic reading method was associated with only the oral reading scores in January. Little help given to individual children seemed to yield higher scores on some of the pupil tests. The teacher's level of competence and the class structure she maintained seemed to have little relationship to mid-year reading achievement.

For the June measures, main effects were shown for all of the eight variables, but in general the proportion of times they were shown decreased from the number of times shown for the January measures. The teacher characteristic, Competence, showed association with all of the tests involving isolated words, but did not seem to be related to scores on connected reading tests or on those tests which measured skills of decoding sounds. The proportion of times that the variable showed any relationship to the pupil measures was small.

The Thinking Approach to Learning continued to be associated with all of the pupil measures, except R-C Consonant Sounds. The Classroom Participation variable also showed strong relationship with all of the pupil measures, except the R-C Consonant Sounds and the Fry Test. These two teacher variables had the highest proportion of main effects on the pupil measures as compared with the other teacher characteristics.

The variable, Approval-Disapproval, also showed association with most of the pupil measures, but in fewer instances. The other four variables, Appropriateness, Class Structure, Individual Differences and Primary Emphasis, all showed some association with some pupil measures. No patterns of their effects were discernible.

Because the effects of the initial pupil measure scores are not known for the present analyses, only tentative conclusions were made from the data. There seemed to be effects of the teacher variables on most of the tests with some of the teacher variables showing more main effects than others.

Table 11 shows the interaction effects for those 21 groupings which showed significant differences on the pupil measures. As can be seen, only seven of the groupings had any interaction effects. The January measures seemed least affected by the teacher characteristic groupings. Of the June measures, the S-A Word Reading test and the Gates Test seemed most affected, having respectively five and four interaction effects. The three combinations of teacher groupings which seemed to be most related to the pupil tests were: a thinking approach to learning with a sound-symbol approach to reading, teacher competence with balanced approval-disapproval for pupil's reading behavior and little attention to individual differences given in the classroom.

Again, because of the possible effect of the initial pupil measures on the interactions, no conclusions were drawn as to their general relationship to reading achievement.

Analysis of Covariance

Because group differences were found within the 21 groupings of teacher characteristics for most of the October pupil measures, it was concluded that differences shown on January and June measures in the analysis of variance probably were influenced by the initial pupil measures. Therefore, plans were made to reanalyze the data, using an analysis of covariance design, with ten of the October measures as covariates. One additional covariate was to be added, a measure of the amount of teaching experience; that variable was expected to influence the quality of the classroom teaching.

A factor analysis of 83 teacher characteristics (reported in Chapter V) resulted in the naming of five teacher factors: one general teacher excellence factor and four methods factors. Because the use of factor scores in the analysis of covariance was beyond the scope of the present study, it was decided instead to use one teacher variable that was highly loaded on each teacher factor. It was felt that such a modified group of teacher variables representing all of the five factors would give a good sample of those teacher characteristics possibly affecting pupil reading achievement significantly.

Unfortunately, the program to be used for such an analysis proved to be unworkable, after several months of effort. The alternate covariance program, which was the only other one available, could not yield the same information because it was written for a smaller computer. It was with great regret that the planned analysis of covariance program was then reduced to a fraction of its original size; of the 900 runs planned, only 26 could be run.

The covariates, independent variables and dependent variables for the analysis of covariance were chosen as follows:

1. Only five of the ten covariates originally planned for use could be used in the workable program. Two variables were given priority:

amount of teacher experience, and children's school experience previous to first grade.

The amount of teaching experience was selected as a covariate because there was considerable difference in the years of teaching experience among the 14 teachers in the sample. Also in the correlation matrix there appeared to be a relationship between the length of experience and the professed reading method, obtained from the Teacher Questionnaire. Using teacher experience as a covariate would thus allow any methods effects to come through unhindered by the amount of teacher experience.

The children's previous school experience was selected as a covariate because of the current concern with pre-school programs as a means of preparing children for school success.

The Thurstone Identical Forms test was included because it showed the greatest number of main effects and interaction effects among the 21 teacher characteristic groupings in the analysis of variance. The remaining two covariates were chosen because they showed both the most initial skill differences in the analysis of variance and also the lowest correlations with the other October tests. The final list of covariates was:

1. School experience previous to first grade
2. Amount of teaching experience
3. Thurstone Identical Forms test
4. M-D Letter Names
5. Metropolitan Listening

It was recognized that those variables included did not account for all of the initial differences found in the October tests, but it was hoped that they accounted for a large proportion of them.

2. Since the workable program was a one-way analysis of covariance, all of the 21 original groupings were abandoned. Only five of the original eight teacher characteristics could be included as independent variables, one at a time. Variables were chosen to represent Factors 1 and 2, Teacher Excellence and Primary Emphasis; in addition, the variable Approval-Disapproval was included as it had not loaded highly on any of the named factors. The other two variables, Appropriateness of the Difficulty Level of the Lesson and Thinking Approach to Learning, were chosen because they did not load as highly on Factor 1 as did other of the teacher characteristics and therefore could be possibly measuring other factors in addition to Factor 1. The final list of independent variables was:

1. Competence
2. Primary Emphasis
3. Approval-Disapproval
4. Thinking Approach to Learning
5. Appropriateness of Lesson

3. The selection of the dependent variables was equally difficult. Because the workable program could not deal with missing data, only those pupil tests which had a sufficiently large N to withstand attrition were included. Therefore, only the tests used exclusively with the 12 classes in the sample could be used. In addition, tests were used only if they

had shown score differences in the previous analysis of variance.

Seven tests were chosen. Since each test had not been affected by each of the five teacher variables listed above, each test was not included in all of the groupings by teacher characteristic. The tests used were:

1. S-A Word Reading
2. S-A Paragraph Meaning
3. S-A Vocabulary
4. S-A Spelling
5. S-A Word Study
6. Fry Test
7. Gates Test

Twenty-six analyses of covariance were obtained. Table 12 presents the data. When the five initial pupil and teacher characteristics were controlled, there were indications that some teacher variables were related positively to end-of-year reading achievement. Four of the five teacher variables did produce significant differences in pupil test scores.

The only teacher characteristic that had no significant association with June pupil achievement was Amount of Approval-Disapproval in relation to pupil reading behavior. It is of interest to note that that same teacher variable did not load significantly on any of the five teacher factors (see Chapter V).

The other four teacher variables -- Teacher Competence, Thinking Approach to Learning, Appropriateness of Difficulty Level of Reading Lesson, and Primary Emphasis (Sound-Symbol) -- affected the S-A Word Reading, Paragraph Meaning and Spelling tests in all cases. Thus,

Table 12

Analysis of covariance

Pupil Test	Source	SS	df	MS	F
		Teacher Variable: Competence			
Word Read	Total	4227.15	153		
	Within groups	4082.72	152	26.86	
	Between groups	144.43	1	144.43	5.37*
Para. Meaning	Total	7501.80	153		
	Within group	7130.32	152	46.91	
	Between groups	371.48	1	371.48	7.92**
Vocabulary	Total	8131.72	153		
	Within group	8083.36	152	53.18	
	Between groups	48.36	1	48.36	.91
Spelling	Total	2801.78	153		
	Within group	2652.40	152	17.45	
	Between groups	149.38	1	149.38	8.56**
Word Study	Total	16087.42	153		
	Within group	15818.64	152	104.07	
	Between groups	268.78	1	268.78	2.58
		Teacher Variable: Approach to Learning			
Word Read.	Total	4229.02	153		
	Within group	4015.84	152	26.42	
	Between groups	213.18	1	213.13	8.07**

(Table continued on next page)

Table 12
(continued)

Pupil Test	Source	SS	df	MS	F
Para. Meaning	Total	7501.05	153		
	Within group	6964.64	152	45.82	
	Between groups	536.41	1	536.41	11.71**
Vocabulary	Total	7892.74	153		
	Within group	7771.92	152	57.71	
	Between groups	120.82	1	120.82	2.29
Spelling	Total	2802.64	153		
	Within group	2656.96	152	17.48	
	Between groups	145.68	1	145.68	8.34**
Word Study	Total	16086.85	153		
	Within group	15342.88	152	100.94	
	Between groups	743.97	1	743.97	7.37**
Fry Test	Total	2876.64	153		
	Within group	2853.04	152	18.77	
	Between groups	23.60	1	23.60	1.26
Gates Test	Total	3148.28	153		
	Within group	3084.08	152	20.29	
	Between groups	64.20	1	64.20	3.16

(Table continued on next page)

Table 12
(continued)

Pupil Test	Source	SS	df	MS	F
	Teacher Variable: Approval-Disapproval				
Word Read	Total	4229.18	153		
	Within group	4176.96	152	27.48	
	Between groups	52.22	1	52.22	1.90
Vocabulary	Total	8133.56	153		
	Within group	8075.24	152	53.12	
	Between groups	58.32	1	58.32	1.10
Spelling	Total	2802.06	153		
	Within group	2786.16	152	18.33	
	Between groups	15.90	1	15.90	.87
Fry Test	Total	2877.20	153		
	Within group	2815.04	152	18.52	
	Between groups	62.16	1	62.16	3.36
Gates Test	Total	3148.74	153		
	Within group	3116.00	152	20.50	
	Between groups	32.74	1	32.74	1.60
	Teacher Variable: Primary Emphasis				
Word Read	Total	4189.54	153		
	Within group	4083.76	152	27.13	
	Between groups	105.78	1	105.78	3.90*

(Table continued on next page)

Table 12
(continued)

Pupil Test	Source	SS	df	MS	F
Paragr. Meaning	Total	7501.24	153		
	Within group	7274.72	152	47.86	
	Between groups	226.52	1	226.52	4.73*
Vocabulary	Total	8131.96	153		
	Within group	8104.64	152	53.32	
	Between groups	27.32	1	27.32	.51
Spelling	Total	2803.02	153		
	Within group	2717.76	152	17.88	
	Between groups	85.26	1	85.26	4.77*
Word Study	Total	10946.97	153		
	Within group	10485.60	152	102.80	
	Between groups	461.37	1	461.37	4.49*

Teacher Variable: Appropriateness

Pupil Test	Source	SS	df	MS	F
Word Read.	Total	4229.43	153		
	Within group	3763.52	152	24.76	
	Between groups	465.91	1	465.91	18.82**
Paragr. Meaning	Total	7501.80	153		
	Within group	6665.20	152	43.85	
	Between groups	836.60	1	836.60	19.08**

(Table continued on next page)

Table 12
(continued)

Pupil Test	Source	SS	df	MS	F
Spelling	**Total**	**2803.20**	**153**		
	Within group	**2615.92**	**152**	**17.21**	
	Between groups	**187.28**	**1**	**187.28**	**10.89****
Gates Test	**Total**	**3147.40**	**153**		
	Within groups	**2960.96**	**152**	**19.48**	
	Between groups	**186.44**	**1**	**186.44**	**9.57****

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* significant at .05 level

** significant at .01 level

teachers who were judged most competent, those who used a predominantly thinking approach to learning, those who emphasized a sound-symbol approach within an eclectic reading method, and those who gave lessons of appropriate level of difficulty, had a positive association with June reading achievement scores.

Those same teacher variables varied in their relationship with the other reading measures, sometimes showing an effect and other times not. The S-A Word Study test seemed significantly related to Thinking Approach to Learning and Primary Emphasis -- Sound-Symbol -- but was not related to Competence. The Gates test, which was used only three times in the analysis, was not associated with Thinking Approach to Learning or Approval-Disapproval, but was related to Appropriateness of Difficulty Level of Lesson. The Fry test was not related to either of the two teacher characteristics by which it was tested.

What appears to be corroborating evidence of the influence of teacher characteristics on reading achievement was the fact that none of the teacher characteristics appeared to have any significant relationship to the S-A Vocabulary Test. That test, of the seven tests used in the analysis, was the only one that was primarily a meaning test. It might be expected that skills measured on such a test would be least affected by teaching of reading. The fact that such a meaning test was not associated with teacher characteristics while other tests measuring reading skills were, tended to make more reasonable the conclusion that teachers did make a difference in pupil achievement, and they seemed to make the greatest difference in relation to those tests which measured skills most related to reading.

The limited nature of the covariance analysis did not make it possible to conclude which of the many teacher characteristics obtained in the study had a positive association with particular pupil skills also obtained, or to conclude what combinations of characteristics were optimal for what outcomes. However, the data indicated that even for the limited teacher variables studied, positive influences were discerned on tests even though those tests were admittedly only fair measures of reading skills for the sample of children used. In summary, the data were highly suggestive of the fact that characteristics of teachers did make a difference in the reading achievement levels of their pupils.

Generally, the results of the analyses reported in the chapter suggested an answer in the affirmative to the major question posed for the study: Do teachers make a difference in the reading achievement of their pupils, taking initial pre-reading skills into account? Although the analysis of covariance was based on only a fraction of the teacher characteristics that had been observed and recorded, the results of even that limited analysis tended to support the finding of significant influence of the teacher on the reading achievement of pupils at the end of grade one.

It was not possible to differentiate teacher effects on the different kinds of reading measures, since the tests used in the analysis of covariance were of a limited variety. However, it was important to note that none of the teacher factors included in the analysis had a significant effect on the meaning measure, the S-A Vocabulary Test.

It appears further that teacher characteristics that had significant associations with pupil achievement could be incorporated into a published reading program -- a methods emphasis and such teacher excellence characteristics as Thinking Approach to Learning and Appropriateness of Level of Difficulty of the Reading Lesson.

One finding from the analysis of variance of particular interest was the unexpected direction in which the variable Attention to Individual Differences was related to pupil's achievement. It appeared that for this particular study those teachers who were observed to pay more attention to individual difference had pupils testing lower on some reading measures at the end of grade one than the teachers who were observed to pay less attention to individual differences. It may well be that in this particular teacher sample the more competent teachers tended to prefer whole-class instruction. However, in any case the finding does question the validity of the emphasis of individual teaching given in many teachers' manuals.

Also, the results of the analysis of variance which indicated initial pupil skill difference on most of the October measures underlined the need for careful control of pupil characteristics in any methods comparison, especially with this kind of socially disadvantaged sample, which apparently had a wide range of skill level.

V

Secondary Data Analysis

The secondary data analyses attempted to explore the interrelationships of pupil and teacher variables, as well as to find what factors actually were measured by the various tests and rating scales. Results of the pupil correlation matrix are reported as are several small data analyses. In addition, factor analyses of both pupil and teacher measures were obtained.

A. Correlations of the Pupil Tests

1. Ranking of Tests

A correlation matrix was obtained for the 45 pupil tests given in October, January, and June. In order to interpret the data within the framework of the reading methods defined for the study, the January and June measures were ranked according to the amount of meaning, decoding, or combination of both required by the test tasks. Thus, some tests were judged to be primarily decoding tasks, and some were judged to be decoding tasks combined with some meaning. Other tests were judged to be decoding tasks combined with considerable meaning, and still others were judged to be primarily meaning tasks. The tests are presented below within the four categories, and are also ranked within each category.[1]

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[1] Only two of the Roswell-Chall subtests were included in the ranking because of the high proportion of zero scores (which rendered their correlation coefficients meaningless) scored on the subtests.

a. Decoding Tests

1. Alphabet Names -- This was judged to be a decoding task with a minimum amount of meaning involved since the child is asked only to give a label or name for each symbol.

2. Roswell-Chall Consonant Sounds -- This was also judged to be a decoding task with a minimum amount of meaning. The task is to give a sound for each of 19 consonants.

3. Roswell-Chall Consonant Combinations -- This was a decoding task of greater difficulty than No. 2 above. The task is to give a sound for consonant combinations such as ch or bl.

b. Decoding with some Meaning Tests

4. Stanford Achievement - Word Study Skills -- The primary emphasis of this test was judged to be decoding, but since sounds are given within the context of words, there is probably some meaning involved in the task.

5. Fry Test -- This was judged to be a decoding test with some meaning because words are used. It is a test of the child's ability to apply his decoding skills to a list of regularly spelled (and most likely unfamiliar) words.[1]

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[1] Familiar and unfamiliar refer to the probability of encountering these words in the published reading programs used -- the conventional basal readers -- which select words primarily on frequency of use in printed matter, rather than on spelling regularity.

6. Stanford Achievement Test - Spelling -- This is an encoding test of both regularly and irregularly spelled words encountered frequently in primary grades. Meaning is probably involved to a greater degree than in 4 and 5 above, since the words are assumed to be familiar to the child and are dictated to him in context as well as in isolation.

7. The Gates Word Recognition Test -- This was also judged to be a decoding test, with some meaning, because words are used. It differs from 5 in that the child is asked to read a list of both regularly and irregularly spelled familiar words. Therefore, there may be more meaning mixed with the decoding task.

c. Decoding with substantial Meaning Tests

8. Gilmore Oral Reading Test - Accuracy -- This is a decoding test of connected reading. It is assumed that more meaning is involved in connected reading than in reading isolated words as in 5 and 7 above.

9. Stanford - Word Reading -- This is a combination meaning and decoding task with more meaning involved than in tests 5 and 7, since pictures are presented for matching with words.

10. Stanford - Paragraph Meaning -- This is a test of connected reading in which meaning assumes the larger proportion of the task. The child demonstrates his comprehension of the paragraph by choosing appropriate words to complete the thought.

d. Meaning Tests

11. Stanford - Vocabulary -- This test is primarily a meaning test since the choices for each item are read by the teacher. Therefore, the

child uses a minimum of decoding skills in choosing the appropriate answer.

12. Storytelling -- This is a meaning test with no decoding involved.

2. Results

The correlation matrix was divided into four parts to facilitate the ease of interpretation. The N's for the correlations varied by test, but fell within the range of 330 to 200 for the 12-class sample and 119 to 64 for the four-class sample. Table 13 presents the intercorrelations of the October and January tests. Table 14 presents the correlations of the October and June tests; Table 15, the correlations of the January and June tests; and Table 16, the intercorrelations of the June tests. Wherever possible, the results are discussed in terms of the four categories of the decoding/meaning continuum presented above. It should be noted that most of the subtests of the Roswell-Chall test were omitted. Since the majority of the children scored zero on them both in the January and June testing, their intercorrelations were felt to be meaningless.

a. Intercorrelations of October and January Tests

Table 13 presents the significant intercorrelations for the October and January measures. As can be seen, the intercorrelations of the various tests given in October were moderate or moderately high with the exception of the high correlation between the Thurstone Pattern Copying Test and the rescoring of that measure.[1]

The correlations between the October and January measures were

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[1] A low correlation was considered to be .20 and below; a moderate correlation was .21 - .40; a moderately high correlation from .41 to .60; and a high correlation from .61 upwards.

Table 13

Intercorrelations of October and January Pupil Tests Arranged on the Decoding-Meaning Continuum

Var. No.	Test	When Given	44	45	46	43	39	40	41	42
			Variable Number							
44	Alphabet Names	Jan.		.56	.20	.65	*			
45	R-C Consonant Sounds	Jan.				.70	.22	.28	.42	.32
46	R-C Consonant Comb.	Jan.				.40	.21		.29	.52
43	Gilmore Accuracy	Jan.							.39	.28
39	Storytelling	Oct.						.32	.26	
40	R-C Auditory Blending	Oct.							.54	
41	R-C Auditory Blending	Jan.								
42	Detroit Words	Oct.								
5	M-D Phonemes	Oct.								
6	M-D Letters	Oct.								
7	M-D Learning Rate	Oct.								
8	Thurs. Pattern Copying	Oct.								
38	Thurs. Pattern Copying (re-score)	Oct.								
9	Thurs. Identical Forms	Oct.								
10	Met. Word Meaning	Oct.								
11	Met. Listening	Oct.								
	Mean		14.20	4.06	.87	5.74	5.36	1.88	4.71	.43
	SD		7.64	3.28	2.94	6.43	3.18	2.42	4.12	2.40
	N		119	119	119	119	108	108	119	109
	No. of zero scores		8	21	84	44	7	43	28	101

*blank spaces indicate correlation not significant at .05 level

Table 13
(continued)

Var. No.	Test	When Given	5	6	7	8	38	9	10	11
			Variable Number							
44	Alphabet Names	Jan.	.46	.65	.42	.33	.48	.51	.36	.44
45	R-C Consonant Sounds	Jan.	.55	.64	.54	.26	.39	.41	.32	.39
46	R-C Consonant Comb.	Jan.	.39	.36	.37	*				
43	Gilmore Accuracy	Jan.	.58	.69	.62	.30	.45	.47	.45	.44
39	Storytelling	Oct.	.28	.25	.21			.20	.29	.25
40	R-C Auditory Blending	Oct.	.29	.28						.27
41	R-C Auditory Blending	Jan.	.36	.40	.30			.33	.30	.29
42	Detroit Words	Oct.	.24	.30	.39	.25	.20	.20		
5	M-D Phonemes	Oct.		.59	.43	.35	.40	.39	.31	.38
6	M-D Letters	Oct.			.55	.36	.46	.36	.30	.40
7	M-D Learning Rate	Oct.				.34	.41	.37	.18	.36
8	Thurs. Pattern Copying	Oct.					.76	.35	.24	.27
38	Thurs. Pattern Copying (re-score)	Oct.						.46	.28	.36
9	Thurs. Identical Forms	Oct.							.57	.39
10	Met Word Meaning	Oct.								.31
11	Met. Listening	Oct.								
	Mean		6.69	13.67	8.46	4.82	11.66	9.55	5.60	7.43
	SD		5.94	7.04	3.94	4.92	6.55	7.04	3.41	2.48
	N		322	321	321	308	303	321	309	318
	No. of zero scores		66	5	2	33		28	3	1

*blank spaces indicate correlation not significant at .05 level

also moderate or moderately high with few exceptions. The Murphy-Durrell Letter Names Test given in October seemed to be a good predictor of January scores on Alphabet Names, Roswell-Chall Consonant Sounds, and Gilmore Accuracy. The October Murphy-Durrell Learning Rate Test was also a high predictor of June Gilmore Accuracy scores.

The intercorrelations between the January measures ran from high to moderate. The high correlation coefficients were the R-C Alphabet Names with Gilmore Accuracy, R-C Consonants and Gilmore Accuracy.

The somewhat higher intercorrelations of the January measures may be indicative of the fact that each was measuring some common aspect of reading. In terms of the decoding/meaning continuum, it appeared that the high correlations may be explained by a high component of decoding in all three of the tests: R-C Alphabet Names, R-C Consonant Sounds, and Gilmore Accuracy.

Overall, it appeared that for the study sample, the October tests that were most predictive of January scores were tests measuring components of reading, such as Letter Names and Learning Rate (ability to learn sight words). The Murphy-Durrell Letter Names Test, the best predictor of January measures, was also the best predictor of June measures, whether of decoding or combined decoding-meaning measures.

b. Correlations of October and June Tests

Table 14 shows the correlations of the October tests with June tests. The June measures are ordered on the decoding/meaning continuum. As

Table 14

Correlations of the October and June Pupil Tests

		June Tests						
Var. No.	October Tests	Alphabet Names 54	R-C Consonant Sounds 56	R-C Consonant Combination 57	S.A. Word Study 27	Fry Test 30	S.A. Spelling 26	Gates Test 31
39	Storytelling	*				.27		.24
40	R-C Aud. Blend	.23	.32	.31		.34		.26
42	Detroit Words			.21		.39	.31	.25
5	M-D Phonemes	.29	.40	.39	.40	.50	.52	.45
6	M-D Letters	.52	.61	.60	.52	.58	.63	.63
7	M-D Learning rate	.30	.46	.49	.47	.50	.54	.53
8	Thurs. Pattern Copying	.25	.35	.37	.19	.47	.29	.23
38	Thurs. Pattern Copying (re-score)	.29	.41	.48	.38	.35	.43	.44
9	Thurs. Identical Forms	.42	.45	.52	.44	.26	.44	.42
10	Met Word Meaning	.29	.37	.44	.29	.20	.26	.32
11	Met. Listening	.47	.50	.41	.41	.21	.35	.33

* blank spaces indicate correlation not significant at .05 level

Table 14
(Continued)

Var. No.	October Tests	June Tests Gilmore Accuracy 28	S.A. Word Reading 23	S.A. Para. Read 24	S.A. Vocabulary 25	Storytelling 55	Auditory Blend 53	S-D Attitude Inventory 22
39	Storytelling	*				.25		
40	R-C Aud. Blend		.26		.28		.35	.27
42	Detroit Words			.31				
5	M-D Phonemes	.26	.57	.50	.32		.43	.41
6	M-D Letters	.44	.70	.65	.37	.35	.44	.40
7	M-D Learning Rate	.30	.57	.56	.35	.27	.35	.37
8	Thurs. Pattern Copying		.33	.34	.20	.24		.16
38	Thurs. Pattern Copying (re-score)	.42	.45	.47	.30	.23	.31	.31
9	Thurs. Identical Forms	.58	.41	.39	.31	.24	.35	.34
10	Met. Word Meaning	.41	.29	.25	.18	.34	.38	.29
11	Met. Listening	.43	.40	.39	.40	.30	.34	.35

* blank spaces indicate correlation not significant at .05 level

can be seen, the Murphy-Durrell Letter Names Test given in October was the best predictor of the decoding and combined decoding-meaning June tests, showing high or moderately high correlations with most of the June measures. The correlations of the M-D Letter Names Test with the S-A Vocabulary Test and the Storytelling Test, the two meaning tests, were considerably lower.

Moderate correlations of the Storytelling Test, Auditory Blending Test, Detroit Words and Metropolitan Word Meaning Test were found with the June measures. Generally, all October measures correlated moderately with the two June meaning tests, the Storytelling and S-A Vocabulary tests.

In summary, of all the October measures, the M-D Letter Names test showed the highest correlation, in the high range, with the June measures. The next in order of magnitude, in the moderate to moderately high range, were the M-D Phonemes, M-D Learning Rate, Thurstone Pattern Copying (rescore), Thurstone Identical Forms, and Metropolitan Listening Tests. Therefore, it appeared that those October tests that measured aspects of both decoding and meaning were predictive of June reading measures. Since the October Metropolitan Word Meaning Test as well as the Metropolitan Listening tests correlated lower with the various June reading measures than did the October decoding measures, it would appear that meaning tests by themselves were weaker predictors of reading achievement than were combined decoding and meaning measures.

c. Correlations of January and June tests

Table 15 presents the correlations of the January and June tests. The

Table 15

Correlations of the January and JunePupil Tests

		June Tests						
Var. No.	January Tests	Alphabet Names (June) 54	R-C Consonant Sounds (June) 56	R-C Consonant Comb. & dig 57	S.A. Word Study 27	Fry Test 30	S.A. Spelling 26	Gates Test 31
44	Alphabet Names	.68	.65	.62	.60	.47	.74	.74
45	R-C Cons.Sounds	.44	.60	.67	.56	.59	.65	.66
46	R-C Cons.Comb.	*	.32	.47	.42	.52	.40	.41
43	Gilmore Accuracy	.39	.45	.69	.77	.80	.80	.85
41	Auditory Blends	.28	.39	.42	.45	.41	.36	.41

*blank spaces indicate correlation not significant at .05 level

Table 15
(Continued)

		June Tests						
		Gilmore Accuracy	S.A. Word Read	S.A. Para. Read	S.A. Vocabulary	Storytelling (Post	Auditory Blend (Post	S-D Attitude Inventory
Var. No.	January Tests	28	23	24	25	55	53	22
44	Alphabet Names	.72	.63	.64	.45	.23	.42	.49
45	R-C Cons. Sounds	.55	.67	.69	.49	*	.48	.48
46	R-C Cons. Comb.	.38	.40	.40	.23	.29	.38	
43	Gilmore Accuracy	.68	.84	.87	.61		.47	.47
41	Auditory Blends	.29	.41	.47	.40		.61	.37

* blank spaces indicate correlation not significant at .05 level

highest correlations were between the January Gilmore Accuracy scores and those June measures which involved both decoding and meaning tasks. The January Alphabet Names, R-C Consonant Sounds and R-C Consonant Combinations (all primarily decoding measures) showed moderately high to high relationships with the June measures, irrespective of the amount of decoding or meaning involved in the June measures.

The January Auditory Blending Test correlated moderately or moderately high with all of the June measures, with the exception of the June Auditory Blending test with which it showed a high relationship. There were only two significant correlations with the June Storytelling test, those of Alphabet Names and the R-C Consonant Combinations. They were both at the low end of the moderate range.

In summary, it appeared that the January Gilmore Accuracy score, the only January combined meaning and decoding test, was the best predictor of June decoding-meaning measures. In other words, strength in reading, combined meaning and decoding, that appeared by January was predictive of reading strength in June. Strength in decoding alone in January was somewhat predictive of June reading measures, but of a lower order of magnitude than a combined decoding-meaning measure.

d. Intercorrelations of June Tests

Table 16 presents the intercorrelations of the June reading achievement measures. The intercorrelations among most of the tests show that those tests which have varying degree of both decoding and meaning were interrelated

Table 16

Intercorrelations of June Pupil Tests
Arranged on the Decoding-Meaning Continuum

Var. No.	Test	54	56	57	27	30	26	31
54	Alphabet Names	*	.66	.46	.44	.30	.62	.61
56	R-C Cons. Sounds			.61	.50	.40	.73	.64
57	R-C Cons. Comb.				.59	.74	.76	.78
27	S. A. Word Study					.46	.75	.73
30	Fry Test						.61	.67
26	S. A. Spelling							.81
31	Gates Test							
28	Gilmore Accuracy							
23	S. A. Word Read.							
24	SA. Para. Read							
25	S. A. Vocabulary							
55	Storytelling							
53	Auditory Blend							
22	Attitude Inventory							
	Mean	19.67	5.27	1.90	24.81	3.36	7.56	8.86
	SD	6.16	3.38	2.33	13.17	5.50	5.94	5.62
	N	89	89	89	207	219	208	229
	No. of zero scores	2	15	43	19	82	29	10

* Blank spaces indicate correlation not significant at .05 level

Table 16
(Continued)

Var.		Variable Number						
No.	**Test**	**28**	**23**	**24**	**25**	**55**	**53**	**22**
54	**Alphabet Names**	.67	.43	.45	*	.23	.30	.42
56	**R-C Cons. Sounds**	.60	.67	.57	.32	.30	.52	.44
57	**R-C Cons. Comb.**	.67	.71	.72	.46	.26	.51	.40
27	**S.A. Word Study**	.65	.76	.71	.65	.34	.40	.52
30	**Fry Test**	.31	.74	.70	.37		.39	.29
26	**S.A. Spelling**	.80	.80	.75	.46	.25	.39	.51
31	**Gates Test**	.89	.80	.78	.45	.24	.38	.47
28	**Gilmore Accuracy**		.75	.70	.42	.26	.32	.47
23	**S.A. Word Read.**			.85	.49	.38	.43	.49
24	**S.A. Para. Read.**				.48	.26	.39	.44
25	**S.A. Vocabulary**						.39	.31
55	**Storytelling**						.28	
53	**Auditory Blend**							.33
22	**Attitude Inventory**							
	Mean	15.84	14.30	11.79	14.33	7.41	4.91	15.45
	SD	10.88	7.53	9.41	7.77	3.20	4.22	5.75
	N	91	208	210	208	89	89	232
	No. of zero scores	23	5	32	10	1	12	17

*** blank spaces indicate correlation not significant at .05 level**

in the moderately high to high range. The tests are discussed below in the four categories of the decoding/meaning continuum.

(1) Meaning Tests (S-A Vocabulary, Storytelling)

The two tests which primarily measure meaning had generally moderate correlations with the reading achievement tests. Those two tests seemed to have no higher relationships with reading achievement tests containing a higher proportion of meaning than they did with tests where decoding was predominant.

Also the two meaning tests showed no significant relationship with each other. A possible explanation for that might be that the Storytelling is an expressive language test while the S-A Vocabulary test is a receptive language test.

(2) Decoding with Substantial Meaning Tests (S-A Paragraph Meaning, S-A Word Reading, Gilmore Oral Accuracy)

The S-A Paragraph Meaning Test was significantly and for the most part highly correlated with all of the other June reading and spelling measures. The highest correlation was with the S-A Word Reading Test. This, no doubt, stemmed from the fact that both tests contain large components of decoding and meaning, and that both require the child either to recognize words as wholes or sound them out as well as know their meaning.

The lowest correlations, all in the moderate range, with the S-A Paragraph Meaning Test were the Alphabet Names and R-C Consonant Sounds Test, both predominantly decoding tests, and the S-A Vocabulary Test and the Storytelling test, both predominantly meaning tests.

A pattern essentially similar to that described for the S-A Paragraph Meaning Test was seen for the relationships between the S-A Word Reading test and the other June measures. Also, there seemed to be no differences between the decoding and the combined decoding-meaning tests in relationship to the Gilmore Accuracy Scores. The lower correlation between the Fry Test and the Gilmore Accuracy Score was unexplained.

(3) Decoding with Some Meaning Tests (S-A Word Study, Fry Test, S-A Spelling, Gates Word Test)

The two predominantly meaning tests, the Storytelling and the S-A Vocabulary tests, showed moderate correlations with the "decoding with some meaning" tests, much the same as described above. There were generally high correlations of the tests in the "decoding with some meaning" category with the "decoding" and "decoding with considerable meaning" tests. The "some meaning" tests themselves showed high intercorrelations.

(4) Decoding Tests (Alphabet Names, R-C Consonant Sounds, R-C Consonant Combinations)

The correlations of the decoding tests with tests in the other three categories on the decoding/meaning continuum have alread been discussed. There were moderately high to high intercorrelations among the decoding tests themselves.

In summary, the June reading tests showed moderately high to high intercorrelations. The tests judged to be decoding or decoding-meaning tests seemed to have the highest relationships. Somewhat lower correlations were found between the meaning tests and the other measures.

B. Sex Differences On Pupil Tests

In the early elementary grades girls tend to score higher on most reading tests than do boys. The mean test scores for each of the measures used with the present sample were compared by sex groupings to see whether the girls' superiority held for this sample. Table 17 presents those tests where significant differences between means for boys and girls were found. As can be seen, only four of the 45 measures showed any significant mean differences, all in favor of the girls.

Table 17

Comparison of four test means by sex grouping

	Girls			Boys			
Test	**Mean**	**SD**	**N**	**Mean**	**SD**	**N**	**$t^{a.}$**
M-D Phonemes	**7.33**	**6.17**	**178**	**5.89**	**5.54**	**144**	**2.22***
M-D Letters	**14.44**	**6.93**	**177**	**12.71**	**7.05**	**144**	**2.20***
Fry Test	**3.99**	**6.28**	**123**	**2.55**	**4.16**	**96**	**2.00***
Alphabet Letters -June	**21.15**	**2.37**	**47**	**18.02**	**6.99**	**42**	**2.77****

a. all results are for a two-tailed test

*** significant at .05 level**

**** significant at .01 level**

Apparently, for this sample, the girls generally did not make significantly higher scores than the boys. It is possible that sex differences

might appear if IQ, or teaching methods, or the children's previous school experience were taken into account, but when taken as a sample no significant differences appeared. This lack may be in part a function of the generally depressed scores earned on all of the tests by the sample. On the other hand, the lack of sex differences has been noted in other samples of socially disadvantaged children.[1]

C. Correlation of Initial Teacher and Pupil Variables with January and June Pupil Measures

Although the relationships of the pupil and teacher variables were explored primarily through the analysis of variance and covariance found in Chapter IV, some of the other teacher and pupil variables were expected to show relationships with pupil test scores. The correlations for some of those variables are reported in Table 18. Appendix E also reports the mean and standard deviation for each of the 78 teacher variables for the sample of 14 teachers.

As can be seen from Table 18, teacher characteristics such as the teacher's highest degree, the amount of general teaching experience, and the amount of specific first grade teaching experience had low correlations, where significant, with pupil test scores.

Class size showed a moderate correlation with achievement, but in an unexpected direction. It appeared that for the sample, the larger the class

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[1] A study underway by one of the investigators showed that there were equal numbers of retarded readers among boys and girls on the third grade level.

Table 18

Significant Correlations of Teacher and Miscellaneous Variables with Pupil Tests Given in January and June[a]

Pupil Tests	Degree of teacher	Experience	Experience Grade 1	Class size	Pupil attendance
Gilmore Accuracy (Jan)	.24	-.23	-.32	.49	-.21
Alphabet Names (Jan)				.34	
Auditory Blends (Jan)			-.23	.34	-.23
R-C Consonant Sounds(Jan)				.35	-.28
R-C Cons. Combinations (Jan)				.22	
S.A. Word Reading				.39	-.19
S.A. Paragr. Meaning				.38	-.18
S.A. Vocabulary		.17	.18	.24	
S.A. Spelling				.38	-.23
S.A. Word Study		.16	.15	.35	-.18
Fry Test				.26	
Gates Test		.15	.14	.29	-.25
R-C Cons. Sounds	-.25	.25	.22		
R-C Cons. Combinations				.24	-.32
Gilmore Accuracy	-.22	.24	.24	.43	-.27
Alphabet Names	-.23	.24			
Auditory Blends	-.24	.32	.28		
Storytelling		.24			
Attitude Inventory	.19	.16	.16	.40	

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[a] Only those correlations significant at .05 and above are reported

Table 18
(continued)

Pupil Tests	Teacher attendance	Class structure	Class participation	Attention to individual needs	Compet.
Gilmore Accuracy (Jan)	-.65	.46	.26		.43
Alphabet Names (Jan)	-.30	.45	.38	.26	.46
Auditory Blends (Jan)	-.33	.31	.21		.32
R-C Consonant Sounds (Jan)	-.52	.41	.26		.37
R-C Cons. Combinations (Jan)	-.36				
S.A. Word Reading	-.32	.39	.25		.26
S.A. Paragr. Meaning	-.30	.37	.22		.23
S.A. Vocabulary	-.26	.28	.19	.17	.19
S.A. Spelling	-.25	.36	.29	.20	.30
S.A. Word Study	-.26	.41	.32	.23	.25
Fry Test	-.30				
Gates Test	-.25	.35	.26	.21	.27
R-C Consonant Sounds		.33	.33	.33	.34
R-C Cons. Combinations		.32	.32	.32	.39
Gilmore Accuracy	.36	.51	.51	.51	.56
Alphabet Names		.37	.37	.37	.38
Auditory Blends					
Storytelling					
Attitude Inventory	-.20	.41	.38	.35	.37

size the higher the reading achievement of pupils.

The correlations of pupil reading measures with both pupil and teacher attendance indicated that attendance in school facilitated learning to read. Although the differences may not be significant, it appeared that teacher attendance had a higher relationship with pupil achievement than did pupil attendance with pupil achievement, showing some small evidence that teaching in the classroom was important!

The four teacher characteristics -- class structure, amount of class participation, attention to individual differences, and teacher competence -- were used in the analysis of variance. The results have already been discussed in Chapter IV. The variable, individual differences, showed a positive relationship to reading achievement in the correlation matrix, but showed a negative relationship in the analysis of variance. The discrepancy seemed unexplainable, except for the fact that two separate Difference scales were used and possibly each measured a different aspect of the characteristic. The correlations presented on Table 18 served to corroborate most of the evidence presented earlier that teacher characteristics do influence pupil achievement. The correlations in most cases were low to moderate, but seemed to show no differences in magnitude from one teacher characteristic to the next. Since all of these four teacher variables loaded highly on Factor 1, the teacher excellence factor, it was not surprising that they would show about the same magnitude of correlation with pupil achievement.

D. Comparison of Professed and Observed Reading Methods of the Sample Teachers

One of the questions raised in the study was that concerning the relationship of the method the teacher said she used in teaching reading with those methods she was actually observed to be using. A comparison could be made since rankings of each teacher's primary emphasis in reading method, from a meaning to a decoding emphasis, were made on the basis of information from the teacher questionnaire, and from direct observations in the classroom. Thus, it was possible to compare the emphasis that each teacher said she gave to beginning reading instruction with her actual emphasis in the classroom.

For the 14 teachers in the sample, a correlation was obtained between the professed and observed rankings of primary reading emphasis of .11; it was not significantly different from zero. At first glance, it appeared that the teachers did not put into practice what they said that they did. However, several factors might have lowered the correlation. Since six teachers were observed more frequently than the other eight, the question was raised as to whether or not frequency of visit provided a more adequate appraisal of the teaching method in effect. When the teachers were grouped by frequency of observations, there appeared to be a higher degree of consistency as shown in Table 19 among those teachers frequently observed; although, again, the resulting coefficients were not significantly different from zero.

Table 19

Correlations between Rankings of Professed and Observed Reading Methods by Various Groupings

N	Group	r
6	Intensively observed teachers	.31
8	Non-intensively observed teachers	-.37
7	Experienced teachers	.32
7	Inexperienced teachers	.13
8	Meaning teachers	.00
6	Sound-symbol teachers	-.05

* significant at .05 level

It would also seem that the more experienced teachers might be more consistent in method, since their teaching experience might allow for better understanding of reading methods. The correlations presented in Table 19 suggested that this was so, although there were no significant data to support the assumption.

The question was raised, would adherents to a particular emphasis in reading be more aware of the components important to that method, and therefore, be more consistent when professed and observed emphases are compared. As Table 19 shows, there was no evidence that this was so.

In summary, the relationship between professed and actual reading method was a complex one, and data from the present study could only give indications of some of the factors influencing it. Possible considerations in rating consistency were the number of observations used in rating the teacher's methods and her experience in teaching. It appeared that the large discrepancy between professed and observed methods emphasis might be somewhat lower when a larger sampling of lessons is observed and when the teachers have more experience.

E. Factor Analysis of Teacher Variables

It cannot be emphasized too strongly that the findings from the factor analysis of teacher variables, discussed below, suffered from the usual limitations of factor analysis, i.e., that the factors found and identified were based only on the variables put into the analysis to begin with. Further, the factor analysis was based on observations of a very small number of teachers, 14 in all, in only one school system. It may well be that the staff did not observe, record, and quantify those aspects of method and teacher characteristics that may, in the final analysis, be the most crucial for pupil achievement in first grade reading. It may be, too, that the factors found for the fourteen teachers were valid only for those particular teachers, teaching in those particular schools, having pupils of those particular characteristics. The investigators were particularly cognizant of the fact that the "observed" differences in approach to beginning reading were probably not as great as would be found among first grade teachers in general in that their approach to beginning reading was limited by the approved method of the school system, a method with heavy emphasis on meaning. The factor loadings may indeed be different for a larger group of teachers representing a wider variation in method. In addition, this analysis alone does not indicate whether any one of the factors was associated with high or low achievement in first grade reading.

With these cautions in mind, the results of the factor analysis of teacher variables are presented below.

A principal component factor analysis was computed, using the 83 teacher characteristics from the Teacher Questionnaire, the Classroom Observation Inventory, and the Teacher Interview. Fourteen factors were extracted in the analysis. Since the major proportion of the total variance, 80%, was accounted for in the first seven factors, only those seven were rotated to orthagonal simple structure, using the varimax procedure.

In identifying the factors, those teacher characteristics with factor loadings of high saturation were considered. A high factor saturation was defined as a loading of .50 or above.

Because the seventh factor extracted and rotated appeared to have meaning, the seven factor rotation was used in naming the factors. Five of those seven factors were judged to be meaningful -- factors 1, 2, 3, 4 and 7. Tables 20-24 present the teacher characteristics with factor loadings of high saturation, ranked in order of their factor loadings, for each of the five identifiable factors. Also included for each factor were the proportions of total and common variance accounted for by each factor.

Since the entire factor table was not presented for all of the 83 teacher characteristics, the communalities for each characteristic were not presented. A discussion of each factor is presented below.

1. Factor 1

Factor 1, accounting for 26% of the total variance, was the clearest of the five factors named. It seemed to represent a general "excellence in teaching" factor. One of the highest loadings on this factor was the competence rating (Var.19). The rating was made by each observer in terms of the goals accomplished in the reading lesson and how the teacher reached those goals.

Other variables loading high on this factor gave indication that teaching excellence was composed of at least three facets: ability to teach reading, ability to organize the group and classroom procedures, and sensitivity to the children.

Ability to teach reading was represented by high loadings on such variables as the quality of the lessons observed, irrespective of type of lesson, connected reading (Var.43), whole word recognition (Var. 20), or word analysis skills (Var. 31).

Not only was the quality of the reading lessons high, but there was a high amount of pupil participation among those working with the teacher (Var.5) and a high degree of involvement among the pupils not working with the teacher (Var.56). The lessons were generally of appropriate difficulty (Var.72) and appeared to be interesting to the children (Var.78). The observed error rate was relatively low (Var.2). There was also a tendency for these teachers to have a greater proportion of "pupil practice in reading than pupil talk" (Var.4).

Table 20

Teacher Factor 1 from Seven Factor Rotation

Variable No.	Variable Name	Factor Loading
19	Competence	.98
43	CR: Quality	.99
20	WWR: Quality	.95
74	Why Good Participation	.83
11	Close vs. Distance B	.89
5	Classroom Participation	.95
71	Individual Differences	.89
31	WA: Quality	.92
78	Interest of Material	.89
7	Relation to Objective Behavior	.86
1	Reinforcement	.82
16	Comfort of Teacher	.83
76	Conducive to Learning	.92
56	Other Group Involvement	.75
8	General Management	.82
18	Class Structure	.85
9	Relation to Objective General Behavior	.77
72	Appropriateness of Lesson	.73
13	Approach to Learning-Thinking	.73
10	Closeness vs. Distance A	.67
12	Approach to Learning-Information	.75
64	When reading Started in Class	.59
2	Number of Errors	-.74
29	WWR: Matching and Saying Word	.66
15	Children's Behavior	.50
4	Pupil Talk vs. Pupil Practice	.72
69	Keeping up with the Field	.68
61	Type of Readiness Used	.52
82	Type of Readiness Used	-.52
46	CR: Oral Reading and Questions	.54
	Common Variance	.33
	Total Variance	.26

The teacher's approach to learning in reading was one that stressed both the imparting of information and skills (Var. 12) and encouragement of thinking (Var. 13). There was also a high degree of reinforcement of correct responses (Var. 1). Her approval or disapproval of the pupils' reading was highly related to their objective performance in reading (Var. 7).

Only four variables related to kind of emphases in beginning reading instruction had significant loadings on Factor 1, and they appeared to be related to both the sound-symbol and to the meaning end of the continuum. Sound-symbol emphases were visual matching and saying the word (Var. 29), and a tendency to prefer more specific (sound-symbol) types of readiness activities (Var. 61). Meaning emphasis was oral reading with questions (Var. 46). A tendency to start reading instruction early (Var. 64) could be related to both emphases. Their loadings were, however, lower on Factor 1 than the more general aspects of teaching reading noted above.

Although it did not have a high loading on Factor 1, one other variable, from the interview, indicated that the teachers judged most competent were those who tended to keep up with the reading field more than the others (Var. 69).

The second facet, ability to organize, was seen from the following variables which loaded relatively high on Factor 1: observed behavior of pupils or the teacher judged to be conducive to learning (Var. 76); relatively high class structure and organization i.e., the teacher tended to give the pupils "clear directions and expectations were clearly spelled out in detail" (Var. 18).

Also related to organizational ability were variables already grouped with ability to teach reading, e.g. high participation of pupils, whether in the group working with the teacher or by themselves.

The third facet, sensitivity to pupils, was seen in the relatively high loadings on attention to individual differences (Var.71), balanced criticism of general pupil behavior (Var. 8), and the tendency of either approval or disapproval to be related to objective behavior both for reading (Var.7) and for general behavior and discipline (Var.9). The teacher tended to be in contact with the pupils (Var.11), tended to be warmer toward them (Var.19), and appeared to be comfortable (Var.16).

In summary, Factor 1 seemed to be a general excellence in teaching factor. A teacher who knew how to teach reading, regardless of her method, who knew how to structure the classroom for learning, and who was sensitive to the children in her class seemed to emerge in this factor.

2. Factor 2

Factor 2, which accounted for about 12% of the total variance, appeared to be a methods emphasis factor. The highest loading was variable 83, primary emphasis in reading, which was derived from items on the Classroom Observation Inventory.[1]

The negative loading of two sound-symbol variables gave further confirmation to the meaning emphasis factor. Those variables were percent

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[1] Variable 70 is the same scale as variable 83 but reversed so that the sound-symbol emphasis is at the high end of the scale. Hence, the negative but identical factor loading for the two variables on Table 21.

Table 21

Teacher Factor 2 from Seven Factor Rotation

Variable No.	Variable Name	Factor Loading
70	Primary Emphasis - sound symbol	-.94
83	Primary Emphasis - meaning	.94
32	WA: Percent of Time	-.96
44	CR: Percent of Time	.82
55	CR: Reading with Eyes 9-never	.81
45	CR: Predominant Mode 9-all silent	.77
33	WA: Listening Rhymes and Sounds	-.63
50	CR: Discussion of Pictures	.70
34	WA: Listening Rhymes Assoc. with Pictures	-.67
46	CR: Oral Reading and T Questions	.66
25	WWR: Meaning, Picture Content	-.52
22	WWR: Simple Look-say	.53
	Common Variance	.15
	Total Variance	.12

of observed time devoted to word analysis skills (Var. 32) and listening to rhymes associated with pictures (Var. 34), which was essentially a sound-symbol approach.

In Factor 2, a meaning emphasis tended to go with a high percentage of time devoted to connected reading, both oral and silent (Var. 44), with silent reading the predominant mode of connected reading (Var. 45). During the connected reading there was also a relatively high amount of discussion of pictures (Var. 50). However, during the connected reading lessons, the teacher represented on Factor 2 tended even less than the others to stress "reading with their eyes" or to stress "reading silently" first before reading orally. That variable may be inconsistent with a meaning approach.

In summary, Factor 2 tended to define a general meaning approach to teaching reading, similar to the approach described in many electic basal series.

3. Factor 3

Factor 3, accounting for 10% of the total variance, did not emerge as clearly as the preceding factors. However, it was similar to Factor 2 in that it appeared to be a methods-emphasis factor.

Overall, Factor 3 appeared to represent a teacher who had a general idea of what she was supposed to do according to accepted policy i.e., emphasize meaning and use the manual; in actual practice she mixed methods.

This factor represented a teacher who said she stressed meaning according to the questionnaire (Vars. 57, 80) [1] and said she used the

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[1] Again Variables 57 and 80 are the same scale but with each giving a different value to meaning or sound-symbol. Var. 80 ranks a meaning approac high.

Table 22

Teacher Factor 3 from Seven Factor Rotation

Variable No.	Variable Name	Factor Loading
57	Teacher Rank - sound symbol	-.82
80	Teacher Rank - meaning	.82
65	How much manual use 5-little	-.69
15	Children's Behavior 9-moderately Controlled	.63
47	CR: Oral Reading . . . Plain	-.50
63	Total Time - Reading	-.51
54	Attention called to previous learning 9- every chance	.72
49	CR: Plain Silent Reading	.55
24	WWR: Configuration	.65
21	WWR: Percent of Time	-.53
26	WWR: Phonics or Structure	.51
23	WWR: Write or Copy Word	-.51
	Common Variance	.12
	Total Variance	.10

teachers' manual of the reading series (Var. 65). Observations of her lessons indicated that she had the children do a moderate amount of plain silent reading (Var. 49), but little plain oral reading (Var. 47).

Whole word recognition practice received little emphasis (Var. 21), but when given, the pupils' attention was called to the configuration of the word (Var. 24) and to the phonic or structural elements (Var. 26). Copying or writing of words was not used (Var. 23).

During the connected reading, the teacher tended to call attention to the phonic, structural and spelling clues already learned when an error is made. Also, this kind of teacher tended to spend a relatively small amount of time on reading (Var. 63).

In summary, Factor 3 showed a teacher using a meaning approach who added sound-symbol methods when appropriate.

4. Factor 4

Factor 4, which accounted for 9% of the total variance, was even less clear than Factor 3. However, it appeared to represent a teacher who was relatively untrained in the teaching of reading (Var. 68) and also tended to have a rather inconsistent approach to beginning reading. She stated in the interview that she tended to have a more specific (sound-symbol) type of readiness program (Vars. 61, 82).[1] Yet her observed lessons tended to stress silent reading, both with and without teacher questioning (Vars. 48, 49).

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[1] Variables 61 and 82 are also the same scale in reversed orders.

Table 23

Teacher Factor 4 from Seven Factor Rotation

Variable No.	Variable Name	Factor Loading
15	Children's Behavior 9-moderately controlled	-.51
35	WA: Sounds assoc. with Printed Letters	-.77
68	Training in Reading Courses	-.63
2	Number of Errors 9-many	.52
61	Type of Readiness 5-SS	.59
82	Type of Readiness 5-Global	-.59
28	WWR: Visual Matching no talk or sound.	.69
42	WA: Teacher's Presentation 9-never isolates	.67
49	CR: Plain Silent Reading	.58
48	CR: Silent and Teachers Questions	.56
77	How Errors Handled 9-gives help	.55
53	CR: Discussion of Semantics	.58
13	Approach to Learning-Thinking 5-much encouragement	.53
	Common Variance	.11
	Total Variance	.09

During the connected reading she discussed the meanings of words and phrases (Var. 53). She also tended to encourage thinking (Var. 13). The level of the lessons appeared to be toward the difficult side (Var. 2), but she tended to use predominantly visual matching in reading lessons. She did not teach word analysis skills by isolating sounds (Var. 42).

In classroom management there were indications that the teacher represented on Factor 4 had unsatisfactory control, being either too rigid or too lax. Thus, Factor 4 appeared to indicate characteristics of a teacher who had a lower degree of competency, a less consistent approach to reading, but who encouraged children while learning. She appeared not to know much about teaching reading but had a fair degree of sensitivity to the children.

5. Factor 7

Factor 7 accounted for 7% of the total variance. It seemed to describe an authoritarian teacher (Vars. 3, 14, 75) who controlled her children with punitive actions. There seemed to be a spelling approach to reading (Vars. 27, 41). The children did not seem especially comfortable in the classroom situation (Var. 17). The factor characterized a teacher who used a rigid approach to both reading and classroom management.

F. Factor Analysis of Pupil Variables

Since the correlation analysis of pupil measures yielded some interrelationships that appeared to be meaningful theoretically, a factor analysis of the pupil measures was undertaken to clarify those relationships. Because

Table 24

Teacher Factor 7 from Seven Factor Rotation

Variable No.	Variable Name	Factor Loading
27	WWR: Spelling or Mention of Letters	.83
41	WA: Spelling	.74
17	Comfort of Children 9-high	-.69
3	Teacher vs. Pupil Talk 9- 90% pupil	-.68
14	Teacher Expectation 9- moderately permissive	-.65
75	Reaction to Child not Participating 1-5 5-positive 1-punitive	-.55
	Common Variance	.09
	Total Variance	.07

of the limited range of test scores obtained from the sample, as well as the possible lack of validity of those tests as measures of pre-reading and reading skills, the usefulness of a factor analytic approach with those measures may be lessened. However, the analysis was undertaken with full realization of its limitations; the results were presented as merely suggestive of some of the possible factors at work in beginning reading, with one particular sample, using one particular group of tests.

The 45 pupil variables were used in a principal component factor analysis. Fourteen factors were extracted, but only seven of them were rotated since 71% of the total variance was accounted for by the first seven factors. The varimax procedure was used to gain orthagonal simple structure.

Those pupil variables with factor loadings of high saturation, defined as .50 or above, were used in identification of factors. Both the two factor and six factor rotations were considered as yielding meaningful factors. On the two factor rotation, Factor 1 was named; on the six factor rotation, Factors 1,5, and 6 were named. Tables 25-28 present the pupil variables with their factor loadings for each factor, together with the total and common variance for each factor. The two sets of factors are discussed below.

The two factor rotation yielded one meaningful factor, Factor 1, but it presented problems in description. It accounted for 29% of the total variance. Generally, the factor appeared to be a decoding-meaning factor. The decoding aspects included the matching of forms (Var. 9), naming of letters (Vars. 44,54,6), recognition of words and sounds (Vars. 28,24,43, 29).

There were varying amounts of meaning combined with the decoding in those tests.

Table 25

Pupil Factor 1 from Two Factor Rotation

Variable No.	Name	Factor Loading
44	Alphabet Names - January	.82
26	S.A. Spelling	.79
31	Gates Test	.78
28	Gilmore Accuracy	.78
23	S.A. Word Reading	.77
56	R-C Consonant Sounds - June	.76
24	S.A. Paragraph Meaning	.75
43	Gilmore Accuracy - January	.73
27	S.A. Word Study	.72
54	Alphabet Names - June	.72
45	R-C Consonant Sounds - January	.71
29	Gilmore Reading Rate	.70
57	R-C Consonant Combinations -June	.70
6	M-D Letter Names	.68
22	S-D Attitude Inventory	.63
9	Thurstone Identical Forms	.62
11	Metropolitan - Listening	.62
38	Pattern Copying	.60
5	M-D Phonemes	.52
	Common variance	.57
	Total variance	.28

The unexplained tests with significant loadings on Factor 1 included an attitude toward reading test (Var. 22), visual-motor test (Var. 38), and a test of receptive language comprehension (Var. 11). Since with the inclusion of those tests the factor did not appear to be completely meaningful, the factors on the six factor rotation were next considered.

On the six factor rotation, Factors 1, 5, and 6 were named, while

Factors 2,3,4 were rejected as meaningless because of the high proportion of zero scores on the tests loading significantly on them.

Factors 1 and 6 on the six factor rotation appeared to be somewhat similar to the Factor 1 already discussed, as well as to each other. Factor 1, on the six factor rotation, accounted for 17% of the total variance. It appeared to be primarily a decoding factor with a moderate meaning component. Connected oral reading (Vars. 28,29) was seen as part of the decoding-meaning process. The Thurstone Identical Forms (Var.2) was judged to be an early ability to deal with visual aspects of decoding. On this factor some of the unexplained variables that were problematical in the first extraction disappeared.

Factor 6, accounting for 18% of the total variance, was similar to both Factor 1's. It also appeared to be a decoding factor with perhaps a greater meaning emphasis than found in Factor 1 (extraction 5). This was shown by the high loadings of the S.A. Paragraph Meaning (Var.24) and Word Reading Tests (Var.23). This factor also included some of the decoding variables not found in Factor 1, particularly the M-D Phonemes (Var.5), M-D Letter Names (Var.6), and M-D Learning Rate (Var.7) given in October. As in all of the other pupil factors discussed, the loadings of the variables were not high.

Thus, the three pupil factors discussed seemed to be decoding-meaning-oriented, since most of the tests loading highly on them were classified as decoding or decoding-meaning tests according to the classification used for the correlation matrices. Why two similar factors occur in six factor

Table 26

Pupil Factor 1 from Six Factor Rotation

Variable No.	Variable Name	Factor Loading
29	Gilmore Reading Rate	.89
28	Gilmore Accuracy	.87
54	Alphabet Names January	.72
44	Alphabet Names June	.70
31	Gates Test	.67
26	S.A. Spelling	.62
56	R-C Consonant Sounds June	.61
9	Thurstone Identical Forms	.55
57	R-C Consonant Combinations June	.54
27	S.A. Word Study	.53
23	S.A. Word Reading	.53
	Common Variance	.24
	Total Variance	.17

Table 27

Pupil Factor 6 from Six Factor Rotation

Variable No.	Variable Name	Factor Loading
31	Gates Test	.57
26	S.A. Spelling	.55
57	R-C Consonant Comb. " Jan.	.51
45	R-C Consonant Sounds January	.77
30	Fry Test	.72
43	Gilmore Accuracy January	.72
24	Stanford Paragraph Reading	.63
6	M-D Letter Names	.62
23	Stanford Achievement Test Word Reading	.62
5	M-D Phonemes	.60
7	M-D Learning Rate	.57
	Common Variance	.26
	Total Variance	.18

rotation was unexplained, since both seemed to be essentially the same factor.

Factor 5, accounting for 6% of the total variance appeared to be a visual motor factor, represented by the two scorings of the Thurstone Pattern Copying Test. It was seen as having some relationship to reading in the early stages of reading teaching.

Table 28

Pupil Factor 5 from Six Factor Rotation

Variable No.	Name	Factor Loading
8	Thurstone Pattern Copying	.83
38	Pattern Copying - rescore	.75
	Common variance	.03
	Total variance	.06

In summary, results similar to those from the correlation matrix were found. It appeared that the measurable aspects of first grade reading were a combination of decoding and meaning with some decoding tasks grouping with the decoding-meaning tasks. Meaning tasks did not group with the above tasks to any degree.

G. Summary

The pupil and teacher measures and their interrelationships were analysed in Chapter V. The results showed moderate to high interrelationships among most of the pupil tests given in October, January and June. The nature of those relationships was further defined in the factor analysis which showed that meaning-decoding factors did account for some of the variance in the tests.

Five teacher factors, one describing teacher characteristics, three factors describing reading methods and one factor combining teacher characteristics and reading method, were found from the 83 teacher characteristics used in the study. Only the first two factors were represented by variables in the analysis of covariance, described in Chapter IV. However, in both cases the variables showed a relationship with end of year reading achievement. Thus, there was evidence that the teacher characteristics as refined by the factor analysis were useful in defining relationships between pupil tests and teacher characteristics.

Other findings reported in Chapter V were unexpected. No sex differences were found on the pupil test scores, a finding contrary to most studies of first grade reading skills.

There was limited evidence to show that large class sizes brought better reading achievement than did small class sizes. However, since the average daily attendance or the pupil mobility rate was not known for the classes in the sample the finding is open to question.

The measure of Attention to Individual Differences used in the pupil-teacher correlation matrix showed the opposite relationship to pupil achievement than did the measure used in the analysis of variance (Chapter IV), i.e., with the measure used in the correlation matrix; the more attention given to individual differences in the classroom gave higher reading achievement scores. Apparently, differing definitions of the variable were used in each case, underlining the need for clear-cut definitions of those characteristics to be measured.

Another significant finding was that there was little relationship between the teacher's professed method and the reading method she was observed to use. Further examination of that correlation showed that it was raised to some degree when either the amount of teaching experience and the frequency of observations of the reading lessons was taken into account. However, there still was considerable discrepancy between professed and observed methods, a finding which suggested a lack of knowledge and understanding of reading methods by those who put them into practice in the classroom.

VI

Conclusions

The study set out to explore first grade reading in depth. Rather than compare the results of two different methods of teaching reading, the effect of teacher implementation on one reading method was explored. In the present study, 83 teacher characteristics representing teacher style and teaching methods were explored for fourteen teachers using an eclectic basal reader method, to see what effect such teacher characteristics might have on pupil reading achievement.

The results showed evidence that some teacher characteristics, i.e., teacher competence, thinking approach to learning, a sound-symbol teaching emphasis, and appropriateness of the level of difficulty of the lesson, did have a relationship to pupil reading achievement at the end of grade one. Such relationships held when pupil October pre-reading skills which could possibly affect the desired relationships were taken into account. There was reason to believe that the relationships found would have been found for a larger number of teacher characteristics had it been possible to put them to test, since the analysis of variance showed that other characteristics also seemed to be related to pupil achievement.

To support the results of the main analysis a teacher factor analysis was done. Five teacher factors were named from the items used to assess teacher characteristics and performance. One factor was a teacher excellence factor, three factors were reading methods and the fifth factor combined teacher characteristics and methods. Variables representing two of those factors, teacher excellence and primary emphasis in reading, showed a relationship to pupil June reading achievement in the analysis of covariance. A test of the other three teacher factors was not made; however, the general approach used in the study shows promise for delineating of the role of the teacher and her reading methods in relation to pupil reading achievement. That teachers apparently do make a difference in the teaching of reading seems to gain support from the findings of the present study.

The interrelationships of the pupil measures showed that many of those tests had some common variance. Generally, there were moderate to high relationships among the tests designated as decoding or decoding-meaning measures. A factor analysis of the pupil measures provided additional evidence that many of the tests measured decoding-meaning skills, as well as unidentified factors.

Other findings were that teachers who follow one accepted method varied considerably within that method. In addition, there was considerable discrepancy between what teachers say they do in reading and with what they were observed to do. Both the frequency of observation and the length of experience of the teacher affected that discrepancy. Thus, more classroom observation may be needed to determine what teachers actually do with the reading method they use.

It was also found that boys and girls had similar scores on the reading achievement tests, unlike results from many other studies. It may be that within socially disadvantaged populations other factors may tend to obscure sex differences in reading skills.

There were several limitations which might have bearing on the conclusions drawn.

Many of the tests used were either newly revised forms of standardized reading tests or tests not standardized on socially disadvantaged populations. Thus, there was some question of their applicability to the present sample. In addition, as noted on the tables in Chapter V, the range of scores was considerably restricted for the sample; many children received zero scores on some of the harder tests. Therefore, there was question about the meaningfulness of the tests for valid evaluation of reading skills.

Difficulty was encountered in the administration of group reading tests to this socially disadvantaged first grade sample, unsophisticated in test-taking. Limited attention spans, poor self-motivation, and the distractions of acting-out children in the classrooms no doubt limited the validity of many of the test scores for individual children.

Because of the limitations of the computer programs, all of the tests could not be used in the final data analysis, especially some of those tests which might have given more information about components of reading skills than did the Stanford Achievement test.

The teacher measures also had limitations. The three teacher measures were constructed by those who used them. Thus, frequent discussion among the observers no doubt increased the amount of agreement on items and made observers' ratings less independent. It is difficult to know whether the high rater agreement obtained gave a more or less accurate account of actual teacher methods and characteristics as a result, but use of the scales by disinterested raters is strongly recommended in future studies to test validity.

Another problem with teacher measures was that changes were made midway in the study in the Classroom Observation Inventory. There may have been subjective judgments made in the collation of the two forms. There were also problems concerning quantification of the items on the three teacher measures. Because of the lack of precedent in coding such items, catagories, no doubt, tended to be somewhat subjective.

There were also several limitations in the data analysis. The sample N's were not large enough to differentiate between the observation data obtained from the four teachers observed weekly and those teachers observed once per month. As a result, each teacher was assigned an average rating for each of the 83 items, based on the total number of times she was observed. Undoubtedly, more detailed information about teacher characteristics would have been obtained by use of the intensively observed sample.

If a more sophisticated data analysis had been possible, it would have been important to evaluate the teacher characteristics at several stages of reading development throughout the first grade year, as the investigators had hoped to do in the four-class subsample.

Another limitation in the data collection was that only a small number of children's characteristics could be taken into account. The investigators had intended to obtain measures of intelligence and socio-economic status, both of which were considered crucial base measures in delineating reading skills. Since those measures could not be obtained, valuable information about interactions of those variables with reading was missing.

Much of the qualitative data collected about teachers and pupils could not be used. Material on the teacher interviews and summary comments of each classroom, written by the observers, were omitted. Data on interactions of individual pupils with their teachers and peers during the reading lesson were also put aside. Since the amount of data collected was considerably greater than that which was used in the study, some question might be raised about the selection of the teacher and pupil characteristics actually used in the data analysis. Other questions were raised about the teachers and their reading methods. First, the small sample of 14 provided a limited range for comparison of reading methods. Since all of the teachers used a basal reader approach, the possibilities for variation of reading emphasis within that method were limited; in a larger sample wider variations or several methods would have provided a more valid test of the questions raised in the study.

Another unsolved problem was that two of the teachers left their classes in the midyear and were replaced with less experienced teachers. Analysis of the data was difficult because only one rating for each teacher characteristic could be used per classroom. A decision was made to use the teacher characteristics of the original teacher rather than those of her replacement, because the teacher's initial influence on reading skills was thought to be greater. Thus, the influence of the original teacher on reading scores was not known except in combination with the replacement. Some question could be raised about the accuracy of the teacher characteristics used to represent 2 of the 12 classrooms.

A major problem in this study design was to insure that the reading lesson observed was typical of the teacher's usual classroom instruction. The data in Chapter V revealed a discrepancy between the teaching observed and how the teacher said she taught. Several questions must be raised in light of that finding. Did the teachers present typical lessons when observers were present? Teachers were requested through letter and interview to make no changes in their usual lesson plans. However, the observers felt that an effort was made to present the best possible lesson to the observer. This was further substantiated in some cases when the observers appeared unexpectedly.

It was important for the study design that there be no feedback from the observers which might influence method or classroom organization. It was possible that a teacher's uncertainty about the appropriateness of the lesson may have influenced her performance.

Many weaknesses were felt to exist in the implementation of the study. However, the study was conceived as a pilot project whose purpose was to provide a framework for studies in depth of reading teaching. As such, it was considered to have achieved its purpose in two respects. The investigators found that teacher characteristics could be measured and quantified through observations in the classroom, and that those characteristics could be related to pupil characteristics. Furthermore, the study gave indication that some of those relationships were significant. These significant

characteristics were not the usual ones such as teacher education or personality, but were characteristics that emphasized reading method and approaches to learning. In conclusion, there was good evidence that studies in depth of teacher method and approaches to learning in relation to reading achievement was a promising approach for investigation of beginning reading.

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Appendix A

Definition of an eclectic basal reader approach [1]

Most methods textbooks and published reading programs for children have agreed on these basic points:

1. Reading is given a broad definition. It includes as major goals, right from the start, word recognition, comprehension, interpretation, appreciation, and application of the facts to the study of personal and social problems.

2. Children start with "meaningful reading" of whole words, sentences, and stories as closely geared to their own experiences and interests as possible. From the start, silent reading is a preferred mode.

3. After the child recognizes "at sight" about 50 words (some authors call for more, some less), he begins, through a process of analysis of words "learned as wholes," a study of the relationship between the sounds in spoken words (phonemes) and the letters representing them (graphemes), i.e., phonics. However, even before phonic instruction, the child is encouraged to identify new words by the other means of word analysis -- picture and meaning clues and structural analysis.

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[1] Chall, J. Innovations in beginning reading. The Instructor Magazine, March 1965, p.5.

4. Instruction in phonics and other word-analysis skills is spread over the six years of the elementary school. Phonic instruction usually starts slowly in grade 1, and picks up momentum in grades 2 and 3.

5. Phonics is not to be drilled or practiced in "isolation," but is to be "integrated" with the "meaningful" connected reading. In addition, the sounds are not to be isolated and blended to form words.

6. The vocabulary of the basal readers for grades 1, 2, and 3 is repeated often and is carefully controlled on a meaning-frequency principle, using words that are the most frequent in general reading matter and judged by the author to be within the child's understanding.

7. A readiness or preparatory period, followed by a slow and easy start in first grade, is recommended for all children. A longer readiness period is recommended for those judged "not ready" for formal reading instruction.

Appendix B

THE CITY COLLEGE
Dept. of Education
Study of Methods of Teaching First Grade Reading

(Teacher Questionnaire)

To the teacher:

We are making a survey of methods and materials used in teaching first grade reading. We ask your help with this questionnaire. Please answer all of the questions below. Return the form in the enclosed envelope as soon as possible. Thank you.

Jeanne Chall
Shirley Feldmann

1. Below are listed several different types of materials which might be used in any given reading program.

In Column I indicate the frequency with which you use the materials in your reading program by placing the number:

1 - next to those materials which are an integral part of your program;

2 - next to those materials which are supplementary to your program; and

3 - next to those materials which you do not use.

	Column I	Column II
Basal Reader Series	________	________
Teachers' Manual for Basal Reader Series	1 M* 2 SS	
Workbooks correlated with Basal Series	________	
Published phonics workbooks, programs, or worksheets (not correlated with basal series)	________	________
Supplementary Readers	________	________
Trade Books	________	

* M Meaning
SS Sound-Symbol

	Column I	Column II
Supplementary published workbooks or materials for developing comprehension		
Word games	SS	
Teacher-made worksheets and devices for word analysis and phonics	SS	
Teacher-made worksheets for developing comprehension	M	
Experience Charts	M	
Others (list)		

2. List below approximately what percent of the total reading time you spend on each of the following activities. The total should add up to 100 percent.

Percent of time per week	**Activity**
M	**Guided silent reading of basal readers**
SS	**Oral reading of basal readers and supplementary materials**
	Correlated Workbook exercises
M	**Discussion and dramatization of stories and other related language activities**
S	**Teaching and giving practice in developing a sight vocabulary**

Percent of time per week	Activity
M	Independent silent reading of trade books and supplementary readers
S	Teaching and giving practice in word analysis skills
M	Supplementary activities to develop word meaning and comprehension skills
______	Others (List) ______
______	______
Total 100%	

3. Check one of the following statements:

In using the teachers' manuals for the basal readers, I follow:

M a. all of the suggestions for a lesson
M b. most of the suggestions for a lesson
S c. some of the suggestions for a lesson
S d. none of the suggestions for a lesson

If you have checked b or c in the above question, indicate briefly which parts of the teachers' manual you do follow.

______

______

______

4. Different authorities in reading tend to favor emphasizing different goals or aspects of reading in the first grade. The following is a list of goals culled from different authorities. Rank each of these goals in the order of importance to your program. Use a rank of 1 for the most important goal and a rank of 10 for the least important goal. Make sure that no two goals are given the same rank.

	Goals of reading	Rank
a.	Developing rapid silent reading	M
b.	Developing broad reading interests	
c.	Developing the ability to read a variety of materials for different purposes	
d.	Developing a rich and broad meaning vocabulary (speaking, listening, understanding)	M
e.	Ability to sound out words independently	S
f.	Critical interpretation of what is read	M
g.	Developing a sight vocabulary	S
h.	Ability to get the literal meaning of what is read	M
i.	Accurate oral reading	S
j.	Learning to associate the sounds in spoken words with the letters used to represent them	S

5. If you were on a Board of Education Committee whose task it is to reduce the number of goals in first grade reading, which of the above ten goals whould you insist upon keeping?

6. Answer each of the questions below according to your own view on the teaching of first grade reading. Check only one answer for each question.

a. Which is more important for first grade children to know? (choose one)

Some basic sight words should be learned before the letter names and sounds are taught. M

Both recognition of alphabet letters and their names should be taught before learning to read. S

b. Which is a more serious deficiency in first grade reading? (choose one)
Accurate word recognition but difficulty in interpeting what is read. ____M____
Inaccurate word recognition but good interpretation of what is read. ____S____

c. In general, the major task for the average English-speaking child learning to read in grade 1 is: (choose one)
Learning to recognize the words in his readers. ____S____
Learning the meanings of the words in his readers. ____M____

d. If a first grade reading program could include only one of the following, which would you include? (choose one)
Oral reading ____S____
Silent reading ____M____

7. Rank the following approaches to independent word recognition in the order of priority that they receive in your program. Assign a 1 to the approach that receives the most attention, a 2 to the next, etc.

__M__ picture clues (recognizing unknown words by associating them with pictures)
__M__ context and meaning clues (recognizing unknown words by "what makes sense" from the surrounding known words)
_____ configurational analysis (recognizing and recalling the form of the word)
__S__ phonetic analysis (recognizing words by "sounding out" letters and groups of letters)
__S__ structural analysis (recognizing unknown words by known roots, beginnings and endings)

8. Teacher Information

Name ____________________ School ____________________
Age 20-25 _____ 26-30 _____ 31-35 _____ 36-40 _____
41-45 _____ 46-50 _____ 51-55 _____

How long have you taught first grade? ____________

What other grades have you taught? ____________ How long? ________

What is your highest degree? ____________ What major ? ____________

Date completed? ____________________

Appendix C

THE CITY COLLEGE
School of Education
CCNY-USOE Reading Study

Classroom Observation Inventory
**Experimental Edition

General Information

Record each event and sequence of activities with the time limits, as it occurs on the blank recording sheets provided.

Also note the interest level by recording, approximately every one to five minutes, the number of children paying attention or not paying attention to the activity. If possible record whether the same children remain interested or whether the interest shifts among individual members.

Begin describing each activity by recording the time it begins, whether it is directed to the whole class or to one group (indicate the level of the group, if possible: whether the high, middle or low group), and then describe the activity -- what the teacher does, what the pupils do, the materials read, how (orally or silently), the number of pages, etc. If sight words are practiced, try to give the number; if sounds, estimate the number, etc.

Include also how the teacher handles the transition from one part of the lesson to the other.

When the teacher is working with one group only, the factual description should concentrate on what goes on in that group. However, include also a statement about what the other groups not working directly with the teacher are doing (materials they are working on, the amount covered, etc.). A judgment should also be made about the interest and involvement of the groups not working with the teacher.

Upon completion of the classroom observation fill out the qualitative and quantitative summary of the Observation Inventory.

Code for Recording Classroom Observation

For convenience, use a standard code for recording the written account of the classroom activities.

Tstands for Teacher. Any account following T indicates what the teacher did or said.

" " quotation marks are placed around what the teacher said. No quotations are made for what the teacher did.

Example: T "Take out your books." Goes to the blackboard.

C stands for Children. Any account following C indicates what one or more children did or said. Underline what the child said. Place

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parentheses around what the child did.

Example: C I can't find the page. (Thumbs through book.)

X stands for correct response. Thus, if three children answer the teacher's question correctly, it is recorded as 3CX . (3CX)

Class________________ **Teacher**__________ **School**______________

Date________________ **Time**__________ **Time**______________

Observer____________________ **No. of Pupils**______________

Time	**# not participating**	**Circle No. in group (put level of group next to it (e.g., H-high, M-medium, L-low, W-whole). Underline no. not participating every five minutes alongside time. Also, indicate time of any change in lesson. *Note what group not reading is doing.**

General Observations

How are pupils reinforced for the correct responses? (e.g. right, good, fine, or some means of non-verbal communication.)

Variable Number

Amount of Reinforcement Used

9	/	1	
Majority of responses reinforced	About 50 % of responses reinforced	Little reinforcement	1

How are errors generally handled? (e.g. Does teacher give the right answer, call on another child, or does she help the pupil by means of various cues? If she helps child think through, what aids does she use -- phonic, meaning, etc.?) 77

Number of errors made

9	/	1	
Many errors	Some errors	Few or no errors	2

Does lesson appear to be too easy, just right or too hard for children? 72

1-9 1: Too hard most of the time 9: Just right all of time

Is there any evidence that the teacher is aware of and provides for the special deficiencies and strengths of individual pupils, especially in reading? Give examples 71 73

71 Scale: 1-9 1: No help 9: Help given often
73 Scale: 1-2 1: No 2: Yes

Estimate the proportion of teacher talk and direction to pupil talk and practice of reading. 3

1	/	/	/	9
90% teacher talk to 10% pupil talk and practice	70% teacher 30% pupil	50% teacher 50% pupil	30% teacher 70% pupil	10% teacher 90% pupil

Estimate the proportion of pupil talk (discussion of content, pictures, etc.) to actual pupil practice of reading or phonics (whole word, readers, practice of sounds, spelling, etc.) 4

1	/	/	/	9
90% pupil talk to 10% pupil reading or phonic practice	70% pupil talk to 30% phonic practice	50% pupil talk to 50% phonic practice	30% pupil talk to 70% phonic practice	10% pupil talk to 90% phonic practice

Extent of Class Participation

Rate the extent to which the class, as a whole, generally appears to be participating, in class lesson. Are they eager to answer questions and generally responsive to teachers questions? Don't consider why they are participating, but rather whether they are. 5

9 ____ High participation on part of most children at all times

____ Moderately high participation on part of most children, most of the time but with some variability

____ Teacher has a group of children who are participating well most of the time, but a fairly large group who are not consistently with the teacher

____ Participation is highly variable, but tends to be low quite often

1 ____ Class is generally unresponsive with only a very few children actually participating

Where, and why, was participation high and where, and why was participation low (in either all or part of lesson)? 74

74 Scale: 1-9 9: Teacher warm and accepting
1: Teacher demands attention-punitive attitude

How does teacher react to children who are not participating 75

75 Scale: 1-5 5: Always tries to involve children
1: Usually takes punitive action

How interesting did presented material seem to children? 78

78 Scale: 1-9 1: Dull 9: Very interesting

Approval-Disapproval

Rate the direction of the teacher's critical reaction to the behavior of the children. Is the teacher's reaction generally one of praise and approval, or does the teacher usually blame and disapprove.

Look for the teacher's reactions to specific things that the children do or fail to do. Don't rate the teacher's general affectionateness or hostility for the class. Include the teacher's remarks, gestures, facial expressions, voice tone, posture, etc. as clues to her approval or disapproval.

Rate separately for content (Reading Behavior) and General Management and Discipline.

Reading Behavior (Variable 6)		Related to objective behavior 5 highly / moderately / 1 little	General Management and Discipline (Variable 8)
4	**Lavish praise and commendation**	/ / /	4
5	**Much praise and commendation**	/ / /	5
8	**Emphasis on approval, disapproval is either infrequent, mild or lacking**	/ / /	8
7	**Very little approval but almost no disapproval**	/ / /	7
9	**Balanced criticism**	/ / /	9
6	**Very little disapproval but almost no approval**	/ / /	6
3	**Emphasis on disapproval, approval either infrequent, mild, or lacking**	/ / /	3
2	**Much disapproval**	/ / /	2
1	**Strong, and/or continuous disapproval and fault finding**	/	1

Variables 7 and 9 sho how discipline is related to objective behavior

What behavior on the part of the children seemed to evoke the strongest approval from the teacher?

What behavior on the part of the children seemed to evoke the strongest disapproval from the teacher?

Closeness vs. Distance

Rate the extent to which the teacher seems to be really close to and in touch with the children. Is the teacher cold and aloof; or is she aware of and in communication with the children? To what extent does she get wrapped up in the needs and feelings of the children? (check one place on both scales.) 10

1	Teacher is very remote and distant	1	Teacher is not really in contact with the children
4	Teacher is somewhat cold and aloof		Teacher able to reach children to some extent
8	Teacher senses their feelings yet remains an adult	5	Teacher interacts easily and comfortably with the children
6	Teacher somewhat too involved in the emotions and feelings of the children		

0

11

Approach to Learning

Rate the extent to which the teacher seems to be trying to give the pupils learning experiences which are assortments of facts and skills, or exercises in thinking. For example, does the teacher stimulate the children to wonder, to experiment and to explore? Or does she recite a lesson, expecting the children to learn it without any inquiry on their part? 12

Do not rate the teacher on how successfully she either supplies facts or stimulates thinking. Consider only the extent to which she seems to be trying to do one or the other. (Check one place on both scales.)

	Information		Thinking
7	Teacher provides many facts and much information, sometimes more than children can handle	1	Does almost nothing to stimulate pupils to think for themselves.
9	Teacher emphasizes the acquisition of information and skills, but it is related to student activities.		Gives some attention to thinking skills
5	Teacher gives some information to students	5	Encourages them to inquire and think independently whenever possible
3	Teacher does not always provide enough information for the pupils and the task.		
1	Teacher's giving of factual knowledge is inadequate for needs of children and the task		

12

13

-.

Classroom Atmosphere

Teacher Expectation

1 3 5 7 9 8 6 2

/ / / / / 14

Restrained or highly controlled atmosphere — **Moderately permissive atmosphere** — **Permissive atmosphere**

Children's Behavior

1 3 5 7 9 8 6 4 2

/ / / / / 15

Highly controlled repressed — **Moderately controlled** — **Uncontrolled**

Comfort of Teacher

9 1

/ / / 16

High — **Medium** — **Low**

Comfort of Children

9 1

/ / / 17

High — **Medium** — **Low**

Behavior Signs (list)

Controlled **Expressive**

Is behavior described above disruptive or conducive to learning? **76**

76 Scale: 1-9 1: Highly disruptive 9: Highly conducive

Class Structure*

Rate the extent to which the teacher organizes the classroom activities and directs the children in their learning and behavior--the extent to which she makes her directions clear to the pupils. 18

Teacher structures for the children--gives detailed clear directions,
__9__ and expectations are clearly spelled out in detail.

Teacher is generally well organized and clear in assigning tasks--
________ directions and expectations clear, but not spelled out as above.

There is a moderate degree of structure, and information on expec-
________ tations. Some degree of vagueness.

There is generally more vagueness than clarity, and more looseness
________ than structure.

__1__ Teacher is generally vague and directions seem confusing to the children.

Summary Rating of Competence

Rate, in summary, the over-all competence displayed by the teacher. 19

9				1
Excellent	Good	Adequate	Poor	Bad

What aspects of the teacher's functioning provide the basis for this rating?

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* From Bank Street College of Education Schedule

Description of the Lesson

Whole Word Recognition
(isolated words, or in phrases, or in sentences)
Major emphasis is on learning whole words

At the end of the lesson, check the quantity and quality of teaching directed to the following reading activities. Include here only those activities that were directed by the teacher.

Quantity		Quality					
		9				1	
Estimate no. of old words	______	/	/	/	/	/	
" " " new "	______						
Time on W.W. recognition (min.)		Exc.	Gd.	Av.	Fair	Poor	20

What percent of observed time was devoted to this part of the lesson?

9										0
/	/	/	/	/	/	/	/	/	/	/
100		80		60		40		20		0

Check kind as well as quantity of whole word practice given.

	9				0	
Simple look-say (association between spoken and printed words--no specific clues, child simply reads isolated words.	/	/	/	/	/	22
	Used as only or predominant method 90%	Used great deal 70%	Used for about 50% of lesson	Used occasionally 30%	Used infrequentl once or twice 10%	
Children write or copy the word with or without pupil saying it.	/	/	/	/	/	23
Attention called to configuration and length of word with or without the pupil saying it (e.g. shape, tall, letter, tail at end of monkey, descending letters book	/	/	/	/	/	24
Discussion of meaning of word, showing of picture involving words, use of word in context of a sentence or story, etc.	/	/	/	/	/	25

Whole Word Recognition (Continued)

	9				0	
	Used as only or predominant method 90%	Used great deal 70%	Used for about 50% of lesson	Used Occasionally 30%	Used infrequentl once or twice 10%	
The use of phonics or the structure of the word to help in learning word (e.g. beginning or ending sounds, smaller words in larger ones, etc.)						26
The actual spelling (saying the letters) of the word or mention of one or more letters in word to help in its recognition.						27
Visual matching of words, without saying it, this includes matching in workbooks or on mimeographed sheets as well as using word cards and board or chart						28
Visual matching of words, and saying the word at the same time						29

	1			9		3
Isolated words	all isolated	mostly isolated	half isolated half connected	mostly connected	all connected	connecte phrases

How was this lesson clear or confusing?

Alphabet, phonics and other Word Analysis Skills

This is to be used only when this is a clearly differentiated lesson and not as part of Whole Word recognition or connected reading.

QUANTITY **QUALITY**

	9				1	31
Estimated time ____minutes	/	/	/	/	/	
Estimated No. of Elements- Old ____	**Exc.**	**Gd.**	**Av.**	**Fair**	**Poor**	
New ____						

What percent of observed time was devoted to this part of the lesson? **32**

9 0

/ / / / / / / / / / /

100 **80** **60** **40** **20** **0**

Check kinds of word analysis activities engaged in (double check the major kinds)

	9				0	
	/	/	/	/	/	
	Used as only or predominant method 90%	**Used great deal 70%**	**Used for about 50% of lesson**	**Used occasionally 30%**	**Used infrequently once or twice 10%**	
Listening to how words rhyme and sound alike, use of words that have same beginning or ending sounds. (book-took, blue-blow) No association with print.	/	/	/	/	/	**33**
Listening to how words rhyme and sound alike, use of words that have same beginnings or ending sounds, only associated with pictures.	/	/	/	/	/	**34**
Sounds associated with printed letters (the letters not in words) e.g. the letter p stands for the sound puh.	/	/	/	/	/	**35**
Sounds associated with parts of printed words (no reference to the meaning of the words)	/	/	/	/	/	**36**
Sounds associated with parts of printed words, and reference is made to the meaning as well as the sound of the word	/	/	/	/	/	**37**

Alphabet, phonics and other Word Analysis Skills (Continued)

	9				0	
	/	/	/	/	/	
	Used as only or predominant method 90%	Used great deal 70%	Used for about 50% of lesson	Used occasionally 30%	Used infrequently once or twice 10%	
Structural Analysis-roots, little words in big words, practice on endings (e.g. ed, s, ing) root words-tie in, untie, compound words, syllables, families (an, tan, fan)	/	/	/	/	/	38
Alphabet- visual matching of letters	/	/	/	/	/	39
Alphabet- associating names of the letters with the letter forms.	/	/	/	/	/	40
Spelling	/	/	/	/	/	41

__Questions**__

Does teacher isolate sound or always give a word to represent it?

1				9	42
/	/	/	/	/	
Always isolates	Generally isolates	Half and half	Seldom isolates	Never isolates	

__**Describe in what way this part of the lesson was poor or confusing or clear and effective.**__

Connected Reading of Textual Materials

Underline which applies:
Charts, board, book, Other ________________

QUANTITY							
	QUALITY						
Number of review pages ________	9				1	43
Number of new pages ________	Exc.	Gd.	Av.	Fair	Poor	

What percent of observed time was devoted to this part of the lesson? 44

9					0
100	80	60	40	20	0

Check which was the predominant mode: 45

9				1
All silent	Mostly silent	About evenly silent and oral	Mostly oral	All oral

Check kind of connected reading practice given:

	90%	70%	50%	30%	10%	
Oral reading guided by teacher questions on content.						46
Plain oral reading (round robin), little or no teacher questioning on content.						47
Silent reading guided by teacher questions on content.						48
Plain silent reading, little or no teacher questioning during the reading, but some discussion or reaction at the end.						49
Discussion of pictures, associating to own experiences, or to possible outcomes or content of the story.						50
Discussion of various points in the story, judgments and evaluations of child or animal behavior in the story.						51

Connected Reading of Textual Materials (Continued)

Discussion of grammatical structure, e.g., why a certain sentence means something and not something else. 52

/ / / / /
90% 70% 50% 30% 10%

Discussion of semantic (conceptual) aspects of the reading, e.g., why a certain word, phrase or expression "means" such and such. 53

/ / / / /

IMPORTANT **While the connected reading lesson was in progress, to what extent did the teacher call the children's attention to phonic, structural, spelling clues already learned, especially when an error was made?** 54

9				1
/	/	/	/	/
Teacher seemed to use every chance	Considerable use	Moderate use	Little use	Never

If teacher did not call attention to structural/phonic elements during the progress of the lesson, did she do so at the end? No____ Yes Explain briefly:

To what extent does the teacher keep reminding that "reading with the eyes" or silent reading, is the first step? 55

1				9
/	/	/	/	/
Frequently		Occasionally		Not at all

Describe in what way this part of the lesson was poor or confusing, or clear and effective:

Group Not Working With the Teacher in Reading Lesson Described Above

(This is to be filled out only when there is more than one group in class)

1. **What kinds of activities are they engaged in? Describe briefly e.g., title and publisher of commercial materials, teacher-made worksheets (attach sample). Indicate what doing -- matching words, coloring pictures, answering questions, reading library books, etc.**

2. **Involvement of this group in their own activity**

9		1
Very involved (Most are busy at their task)	**Somewhat involved**	**Not involved**

3. **When these children are not actively involved in their assigned task, what are they doing? (e.g., moping, dreaming, fidgeting, walking around, etc.)**

4. **If good, why? Your observations.**

5. **If became restless, why? Your observations.**

SUMMARY

Summary and additional comments. Attempt to pull together most important points and give a brief overall picture of the teacher. Add any subjective ideas or feelings that you think might be significant.

Appendix D

Outline for Teacher Interviews

1. **What are the children now doing in reading?**
   Try to get as complete a description of the reading program as possible, including:

   1a. the materials used (basal readers, publisher, levels; correlated workbooks; special workbooks; teacher devised worksheets (kind); games and gadgets, etc.)

   1b. If not mentioned by teacher, probe for use of:
   Experience charts (how?)
   What other reading activities?

2. **How much time is spent on the different aspects of the program per day? per week?**

   2a. Is the "reading period" broken up into two or three separate parts or is it all done together during one part of the day?

   2b. If all done together, when scheduled?

   2c. If separated, when is each part done? (Get hours of day)

3. **Is reading part of other activities besides the regularly scheduled reading periods noted above in #2?**

4. **If not already mentioned, ask directly**
   How is the reading related to other language arts: e.g., speaking, listening, literary appreciation, spelling, writing.

   When are the other language arts taught?
   How taught?

5. **Did she select reading program or is she following supervisor's suggestions? On what basis did she select the reading program and the materials she uses? Who selected the basal series, workbooks and worksheets? Did a supervisor suggest them? Other teacher? etc.**

6. Are the children grouped for reading?
How many groups? Number in each? On what basis grouped?

6a. When did grouping begin? (Teacher variable 64)

6b. When she works with one group, what do others do?

7. What was done in reading since the beginning of the semester?
How did she start? If phonics is mentioned, ask her to specify.

8. Did she have a readiness period for all of them? (Teacher variable 61)
What did it consist of? Were readiness books used? How long a time was devoted to readiness?

9. When did she start them on reading? (Teacher variable 62)
How did she do it? Examples

10. When did she introduce them to the pre-primers? How long on pre-primers? Primers, etc.?

11. Does she follow the teacher's guide? (Teacher variable 65)
How much and how literally does she follow the suggestions? The order? et
Which parts does she follow regularly?
What aspects are done sometimes or adapted? What omitted, etc.?

Why does she follow or omit certain parts?

12. With regard to her reading program, what does she consider the biggest challenge? (Her most difficult problems) Why?

13. What is she most satisfied with in her program? Why?

14. What are her immediate goals for the children - (Leave open ended)

15. What do you expect (hope) to accomplish with them by the end of Grade 1? i.e., her long term goals? (Leave open ended at first, but then probe for reader levels, phonics, comprehension, etc.) (Teacher variable 66)

16. You have taught Grade 1 for ______ years.
What do you find yourself being more and more convinced about in 1st grade reading? more doubtful about in first grade reading?

17. How would you rate the abilities of the children in your class?
Above average -
Average - (Teacher variable 67)
Below average -

17a. What aspects of reading seem to be easy for her children to learn?

17b. What aspects seem to be hardest for her children to learn?

18. How much writing do the children do? Leave open, then probe if not mentioned:
    When do they learn words, the alphabet and sounds?

19. Where did she get the most valuable suggestions regarding the teaching of 1st grade?

20. How much training in reading does she have?
    Method courses, inservice, Where? (Teacher variable 68)

21. How does she keep up with things? (Teacher variable 69)

22. With kids who are not learning by regular methods, the lower group, do you use any special methods, materials?

23. Is there anything you would like to add about your program, problems, or other things about 1st grade reading if not covered by above questions?

Appendix E

Means and SD's of 78 Teacher Variables

Variable	No.	Mean	SD
Reinforcement	**1**	**43.64**	**19.23**
Number of errors	**2**	**48.29**	**11.25**
Teacher talk	**3**	**29.79**	**11.01**
Pupil talk	**4**	**66.14**	**14.93**
Classroom participation	**5**	**59.86**	**21.29**
Approval-disapproval-Reading	**6**	**52.50**	**11.49**
Approval-disapproval-Behavior	**7**	**35.43**	**9.46**
Approval-disapproval-General Management	**8**	**46.64**	**12.89**
T's reaction related to objective behavior	**9**	**34.86**	**10.10**
Closeness A vs. distance	**10**	**47.29**	**12.70**
Closeness B vs. distance	**11**	**31.79**	**12.25**
Approach to Information: Learning	**12**	**65.36**	**16.00**
Approach to Learning: Thinking	**13**	**24.07**	**8.51**
Teacher expectation	**14**	**40.29**	**20.60**
Children's behavior	**15**	**50.21**	**17.08**
Comfort of teacher	**16**	**58.43**	**18.07**
Comfort of children	**17**	**63.21**	**15.98**
Class structure	**18**	**68.79**	**19.15**
Competence	**19**	**56.43**	**20.62**

Variable	No.	Mean	SD
WWR Quality	20	55.64	20.60
WWR Percent of time	21	30.86	15.25
WWR 22: Simple Look-say	22	38.86	18.77
WWR 23: Write or copy word	23	4.50	5.45
WWR 24: Configuration	24	4.29	7.93
WWR 25: Meaning, picture, context	25	29.43	16.50
WWR 26: Phonics or structure	26	14.71	9.51
WWR 27: Spelling or mention of letters	27	3.93	5.27
WWR 28: Visual matching no talk or sound	28	1.50	2.47
WWR 29: Visual matching and saying word	29	3.21	3.43
WWR 30: Isolation	30	37.71	17.08
WA Quality	31	51.86	20.53
WA Percent of time	32	18.00	18.13
WA 33: Listening rhymes and sounds	33	10.71	13.49
WA 34: Listening rhymes associated with pictures	34	7.57	10.26
WA 35: Sounds associated with printed letters	35	9.64	10.82
WA 36: Sounds associated with parts of printed words	36	19.14	21.45
WA 37: Sounds, printed words, meaning	37	14.43	14.13
WA 38: Structural analysis	38	12.43	23.41
WA 39: Alphabet-visual matching of letters	39	0.71	1.75

Variable	No.	Mean	SD
WA 40: Alphabet-associating names with forms	40	6.79	13.32
WA 41: Spelling	41	1.93	5.32
WA 42: T's presentation	42	66.29	14.44
CR: Quality	43	51.00	19.44
CR: Percent of time	44	45.57	21.65
CR 45: Predominant Mode	45	69.36	17.57
CR 46: Oral reading and T. questions	46	23.21	13.49
CR 47: Oral reading - plain	47	25.57	20.94
CR 48: Silent reading and T. questions	48	10.71	10.57
CR 49: Silent Reading - plain	49	6.36	9.98
CR 50: Discussion of pictures - projection	50	13.93	9.87
CR 51: Discussion of points in story evaluation	51	11.79	8.74
CR 52: Discussion of grammatical structure	52	0.93	1.16
CR 53: Discussion of semantics	53	0.57	1.05
CR 54: Attention called to phonic clues	54	21.50	13.02
CR 55: Reading with the eyes	55	62.43	28.76
Other group involvement	56	56.00	19.39
Questionnaire: Teacher rank	57	3.36	0.81
Q: Teacher rating	58	2.50	0.73
Q: Teacher consistency	59	2.07	1.10
Q: Rank of teacher	60	5.71	1.71

Variable	No.	Mean	SD
Interview: Type of readiness	61	3.00	1.51
Int: When started reading	62	3.21	1.26
Int: Total-time Reading	63	3.86	2.61
Int: When grouping started	64	4.93	3.28
Int: How much manual use	65	3.21	1.32
Int: Expectation of achievement	66	3.00	1.00
Int: Teacher rating	67	1.71	1.03
Training in reading courses	68	1.79	0.86
Keeping up with field	69	1.79	0.86
Primary emphasis ob. reading	70	3.21	2.43
Individual differences	71	4.43	2.74
Appropriateness	72	5.93	2.99
Individual children taken in account	73	1.93	0.26
Why good participation	74	4.93	3.22
Reaction to child not participating	75	2.79	1.20
Conducive to learning	76	6.07	2.79
How errors handled	77	5.71	0.88
Interest of materials	78	4.36	2.09